

# JEFFERSON MATH PROJECT REGENTS BY PERFORMANCE INDICATOR: TOPIC

NY Integrated Algebra Regents Exam Questions  
from Fall 2007 to August 2010 Sorted by PI: Topic  
(Answer Key)

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*Dear Sir*

*I have to acknowledge the receipt of your favor of May 14. in which you mention that you have finished the 6. first books of Euclid, plane trigonometry, surveying & algebra and ask whether I think a further pursuit of that branch of science would be useful to you. there are some propositions in the latter books of Euclid, & some of Archimedes, which are useful, & I have no doubt you have been made acquainted with them. trigonometry, so far as this, is most valuable to every man, there is scarcely a day in which he will not resort to it for some of the purposes of common life. the science of calculation also is indispensable as far as the extraction of the square & cube roots; Algebra as far as the quadratic equation & the use of logarithms are often of value in ordinary cases: but all beyond these is but a luxury; a delicious luxury indeed; but not to be indulged in by one who is to have a profession to follow for his subsistence. in this light I view the conic sections, curves of the higher orders, perhaps even spherical trigonometry, Algebraical operations beyond the 2d dimension, and fluxions.*

Letter from Thomas Jefferson to William G. Munford, Monticello, June 18, 1799.

## Integrated Algebra Regents Exam Questions by Performance Indicator: Topic Answer Section

1 ANS: 3

$$|-5(5) + 12| = |-13| = 13$$

PTS: 2 REF: 080923ia STA: A.N.6 TOP: Evaluating Expressions

2 ANS: 1

$$-|a - b| = -|7 - (-3)| = -|-10| = -10$$

PTS: 2 REF: 011010ia STA: A.N.6 TOP: Evaluating Expressions

3 ANS: 3

PTS: 2

REF: fall0705ia

STA: A.N.1

TOP: Identifying Properties

4 ANS: 2

PTS: 2

REF: 080802ia

STA: A.N.1

TOP: Identifying Properties

5 ANS: 3

PTS: 2

REF: 060926ia

STA: A.N.1

TOP: Properties of Reals

6 ANS:

$-6a + 42$ . distributive

PTS: 2 REF: 061032ia STA: A.N.1 TOP: Properties of Reals

7 ANS: 4

PTS: 2

REF: fall0704ia

STA: A.A.29

TOP: Set Theory

8 ANS: 1

PTS: 2

REF: 061021ia

STA: A.A.29

TOP: Set Theory

9 ANS: 3

PTS: 2

REF: 010917ia

STA: A.A.29

TOP: Set Theory

10 ANS: 4

PTS: 2

REF: 060930ia

STA: A.A.29

TOP: Set Theory

11 ANS: 4

PTS: 2

REF: 081022ia

STA: A.A.29

TOP: Set Theory

12 ANS: 4

PTS: 2

REF: 061001ia

STA: A.A.30

TOP: Set Theory

13 ANS: 3

PTS: 2

REF: 081009ia

STA: A.A.30

TOP: Set Theory

14 ANS: 4

$$A = \{2, 4, 6, 8, 10, 12, 14, 16, 18, 20\}$$

PTS: 2 REF: 080912ia STA: A.A.30 TOP: Set Theory

15 ANS: 2

The set of integers greater than -2 and less than 6 is  $\{-1, 0, 1, 2, 3, 4, 5\}$ . The subset of this set that is the positive factors of 5 is  $\{1, 5\}$ . The complement of this subset is  $\{-1, 0, 2, 3, 4\}$ .

PTS: 2 REF: 060818ia STA: A.A.30 TOP: Set Theory

16 ANS:  
 {1,2,4,5,9,10,12}

PTS: 2 REF: 080833ia STA: A.A.30 TOP: Set Theory

17 ANS: 1 PTS: 2 REF: 011004ia STA: A.A.31  
 TOP: Set Theory

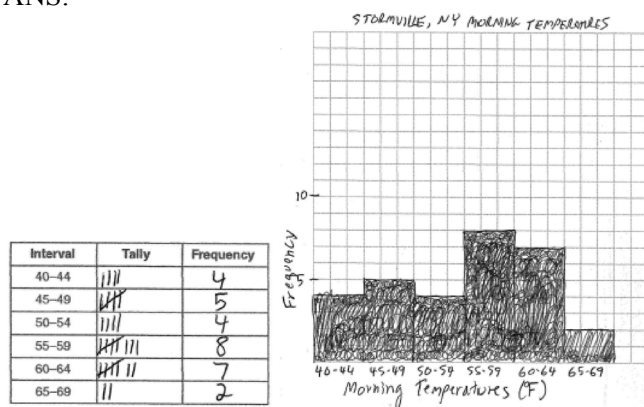
18 ANS: 3 PTS: 2 REF: fall0710ia STA: A.A.31  
 TOP: Set Theory

19 ANS: 2 PTS: 2 REF: 081003ia STA: A.A.31  
 TOP: Set Theory

20 ANS:  
 $0 \leq t \leq 40$

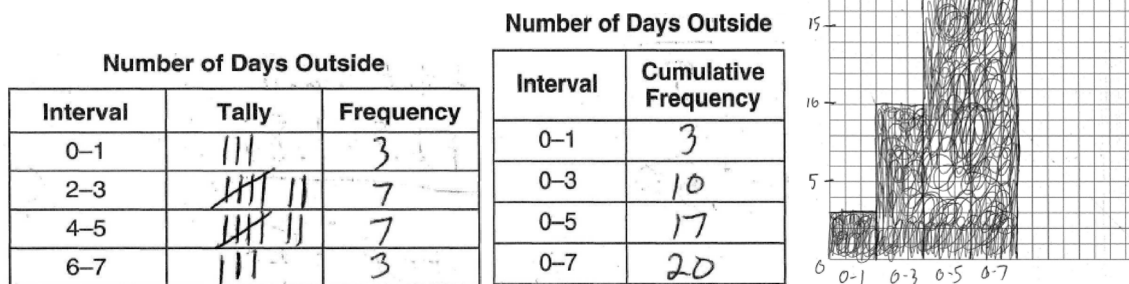
PTS: 2 REF: 060833ia STA: A.A.31 TOP: Set Theory

21 ANS:



PTS: 4 REF: 060938ia STA: A.S.5  
 TOP: Frequency Histograms, Bar Graphs and Tables

22 ANS:



PTS: 4 REF: 080838ia STA: A.S.5  
 TOP: Frequency Histograms, Bar Graphs and Tables

23 ANS: 3  
 $25 - 18 = 7$

PTS: 2 REF: 060822ia STA: A.S.9  
 TOP: Frequency Histograms, Bar Graphs and Tables

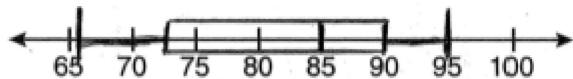
24 ANS:  
30, 20, 71-80, 81-90 and 91-100

PTS: 4 REF: 061038ia STA: A.S.9  
TOP: Frequency Histograms, Bar Graphs and Tables

25 ANS: 2  
The median score, 10, is the vertical line in the center of the box.

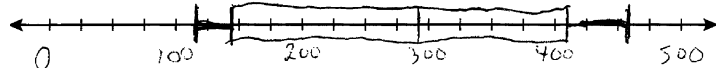
PTS: 2 REF: fall0709ia STA: A.S.5 TOP: Box-and-Whisker Plots

26 ANS:



PTS: 4 REF: 080939ia STA: A.S.5 TOP: Box-and-Whisker Plots

27 ANS:  
minimum is 120, 1st quartile is 145, median is 292, 3rd quartile is 407, and maximum is 452



PTS: 3 REF: 081034ia STA: A.S.5 TOP: Box-and-Whisker Plots

28 ANS: 3  
The value of the third quartile is the last vertical line of the box.

PTS: 2 REF: 080818ia STA: A.S.6 TOP: Box-and-Whisker Plots

29 ANS: 3  
The value of the upper quartile is the last vertical line of the box.

PTS: 2 REF: 060915ia STA: A.S.6 TOP: Box-and-Whisker Plots

30 ANS: 1 PTS: 2 REF: 011001ia STA: A.S.6  
TOP: Box-and-Whisker Plots

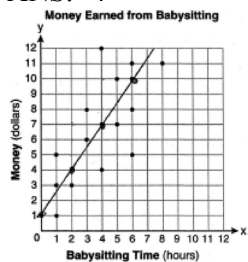
31 ANS: 4 PTS: 2 REF: 010929ia STA: A.S.6  
TOP: Box-and-Whisker Plots

32 ANS: 3 PTS: 2 REF: 061017ia STA: A.S.11  
TOP: Quartiles and Percentiles

33 ANS: 2 PTS: 2 REF: fall0701ia STA: A.S.7  
TOP: Scatter Plots

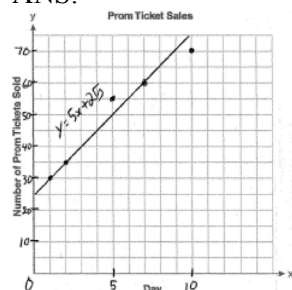
34 ANS: 3 PTS: 2 REF: 081001ia STA: A.S.7  
TOP: Scatter Plots

35 ANS: 4



PTS: 2 REF: 080822ia STA: A.S.8 TOP: Scatter Plots

36 ANS:



PTS: 3 REF: 060936ia STA: A.S.8 TOP: Scatter Plots

37 ANS: 4 PTS: 2 REF: 060805ia STA: A.S.12

TOP: Scatter Plots

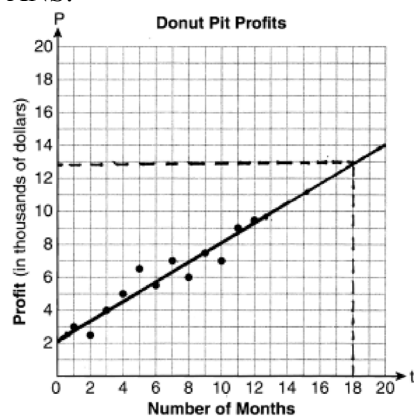
38 ANS: 2 PTS: 2 REF: 011019ia STA: A.S.12

TOP: Scatter Plots

39 ANS: 2 PTS: 2 REF: 080930ia STA: A.S.17

TOP: Scatter Plots

40 ANS:



They will not reach their goal in 18 months.

PTS: 3 REF: 061036ia STA: A.S.17 TOP: Scatter Plots

41 ANS: 3

mean = 6, median = 6 and mode = 7

PTS: 2 REF: 080804ia STA: A.S.4 TOP: Central Tendency

- 42 ANS: 4  
The mean is  $80.\bar{6}$ , the median is 84.5 and the mode is 87.
- PTS: 2 REF: 010907ia STA: A.S.4 TOP: Central Tendency
- 43 ANS:  
225000, 175000, the median better represents the value since it is closer to more values than the mean.
- PTS: 4 REF: fall0737ia STA: A.S.4  
TOP: Frequency Histograms, Bar Graphs and Tables
- 44 ANS:  
315,000, 180,000, the median better represents value since it is closer to more prices than the mean.
- PTS: 4 REF: 060839ia STA: A.S.4  
TOP: Frequency Histograms, Bar Graphs and Tables
- 45 ANS:  
81.3, 80, both increase
- PTS: 3 REF: 011035ia STA: A.S.16 TOP: Central Tendency
- 46 ANS: 4  
$$\frac{2+3+0+1+3+2+4+0+2+3}{10} = \frac{20}{10} = 2 \quad \frac{x}{10} = 2+0.5$$
$$x = 25$$
- PTS: 2 REF: 081020ia STA: A.S.16 TOP: Average Known with Missing Data
- 47 ANS: 3  
The other situations are quantitative.
- PTS: 2 REF: 060819ia STA: A.S.1 TOP: Analysis of Data
- 48 ANS: 3  
The other situations are quantitative.
- PTS: 2 REF: 060905ia STA: A.S.1 TOP: Analysis of Data
- 49 ANS: 2  
The two values are shoe size and height.
- PTS: 2 REF: fall0714ia STA: A.S.2 TOP: Analysis of Data
- 50 ANS: 3  
Frequency is not a variable.
- PTS: 2 REF: 011014ia STA: A.S.2 TOP: Analysis of Data
- 51 ANS: 3 PTS: 2 REF: 061011ia STA: A.S.2  
TOP: Analysis of Data
- 52 ANS: 1  
To determine student interest, survey the widest range of students.
- PTS: 2 REF: 060803ia STA: A.S.3 TOP: Analysis of Data

53 ANS: 1  
Everyone eats, can shop in malls and wear clothes. People who work in a sporting goods store probably watch more sports television than most.

PTS: 2 REF: 010923ia STA: A.S.3 TOP: Analysis of Data

54 ANS: 4  
Surveying persons leaving a football game about a sports budget contains the most bias.

PTS: 2 REF: 080910ia STA: A.S.3 TOP: Analysis of Data

55 ANS: 4 PTS: 2 REF: 061022ia STA: A.S.3  
TOP: Analysis of Data

56 ANS: 3  
The number of correct answers on a test causes the test score.

PTS: 2 REF: 080908ia STA: A.S.13 TOP: Analysis of Data

57 ANS: 1  
A rooster crows before sunrise, not because of the sun.

PTS: 2 REF: fall0707ia STA: A.S.14 TOP: Analysis of Data

58 ANS: 3  
The age of a child does not cause the number of siblings he has, or vice versa.

PTS: 2 REF: 011030ia STA: A.S.14 TOP: Analysis of Data

59 ANS: 3 PTS: 2 REF: 081017a STA: A.S.14  
TOP: Analysis of Data

60 ANS: 1 PTS: 2 REF: fall0723ia STA: A.M.3  
TOP: Error

61 ANS: 2  
$$\left| \frac{149.6 - 174.2}{149.6} \right| \approx 0.1644$$

PTS: 2 REF: 080926ia STA: A.M.3 TOP: Error

62 ANS: 2  
$$\left| \frac{55.42 - 50.27}{55.42} \right| \approx 0.093$$

PTS: 2 REF: 081023ia STA: A.M.3 TOP: Error

63 ANS: 1  
$$\left| \frac{289 - 282}{289} \right| \approx 0.024$$

PTS: 2 REF: 080828ia STA: A.M.3 TOP: Error

64 ANS: 2

The volume of the cube using Ezra's measurements is 8 ( $2^3$ ). The actual volume is 9.261 ( $2.1^3$ ). The relative error

$$\text{is } \left| \frac{9.261 - 8}{9.261} \right| \approx 0.14.$$

PTS: 2 REF: 060928ia STA: A.M.3 TOP: Error

65 ANS:

618.45, 613.44, 0.008.  $21.7 \times 28.5 = 618.45$ .  $21.6 \times 28.4 = 613.44$ .  $\left| \frac{618.45 - 613.44}{613.44} \right| \approx 0.008$ . An error of less than 1% would seem to be insignificant.

PTS: 4 REF: 060838ia STA: A.M.3 TOP: Error

66 ANS:

1,512, 1,551.25, 0.025.  $36 \times 42 = 1512$ .  $36.5 \times 42.5 = 1551.25$ .  $RE = \left| \frac{1512 - 1551.25}{1551.25} \right| \approx 0.025$ .

PTS: 3 REF: 010934ia STA: A.M.3 TOP: Error

67 ANS:

$$0.102. \frac{(5.3 \times 8.2 \times 4.1) - (5 \times 8 \times 4)}{5.3 \times 8.2 \times 4.1} = \frac{178.16 - 160}{178.16} = 0.102$$

PTS: 3 REF: 011036ia STA: A.M.3 TOP: Error

68 ANS:

$$\frac{600 - 592}{592} \approx 0.014$$

PTS: 2 REF: 061031ia STA: A.M.3 TOP: Relative Error

69 ANS:

$\frac{3}{8}$ : (H,H,H), (H,H,T), (H,T,H), (**H,T,T**), (T,H,H), (**T,H,T**), (**T,T,H**), (T,T,T)

PTS: 2 REF: 080933ia STA: A.S.19 TOP: Sample Space

70 ANS:

(S,S), (S,K), (**S,D**), (K,S), (K,K), (**K,D**), (**D,S**), (**D,K**), (D,D),  $\frac{4}{9}$

PTS: 3 REF: fall0736ia STA: A.S.19 TOP: Sample Space

71 ANS:

(H,F,M), (H,F,J), (H,F,S), (H,A,M), (H,A,J), (H,A,S), (C,F,M), (C,F,J), (C,F,S), (C,A,M), (C,A,J), (C,A,S), (T,F,M), (T,F,J), (T,F,S), (T,A,M), (T,A,J), (T,A,S). There are 18 different kids' meals, 12 do not include juice and 6 include chicken nuggets.

PTS: 4 REF: 010939ia STA: A.S.19 TOP: Sample Space

72 ANS: 2

PTS: 2

REF: 060908ia

STA: A.S.21

TOP: Empirical Probability



73 ANS: 3

$$\frac{15}{15+13+12} = \frac{15}{40} = \frac{3}{8}$$

PTS: 2 REF: 061006ia STA: A.S.21 TOP: Experimental Probability

74 ANS: 3 PTS: 2 REF: 080907ia STA: A.S.20

TOP: Theoretical Probability

75 ANS: 2 PTS: 2 REF: 011002ia STA: A.S.20

TOP: Theoretical Probability

76 ANS: 4

$$P(G \text{ or } W) = \frac{4}{8}, P(G \text{ or } B) = \frac{3}{8}, P(Y \text{ or } B) = \frac{4}{8}, P(Y \text{ or } G) = \frac{5}{8}$$

PTS: 2 REF: 060802ia STA: A.S.22 TOP: Theoretical Probability

77 ANS: 4

$$P(O) = \frac{3}{6}, P(E) = \frac{3}{6}, P(< 6) = \frac{5}{6}, P(> 4) = \frac{2}{6}$$

PTS: 2 REF: 010903ia STA: A.S.22 TOP: Theoretical Probability

78 ANS:

$$\text{orchestra: } \frac{3}{26} > \frac{4}{36}$$

PTS: 2 REF: 011033ia STA: A.S.22 TOP: Theoretical Probability

79 ANS:

Hat A, add 1 not green to Hat A, add 11 green to Hat B, and add none to Hat C.

PTS: 4 REF: 081038ia STA: A.S.22 TOP: Theoretical Probability

80 ANS: 3 PTS: 2 REF: fall0702ia STA: A.S.23

TOP: Theoretical Probability

KEY: mutually exclusive events

81 ANS: 2

The events are not mutually exclusive:  $P(\text{prime}) = \frac{3}{6}$ ,  $P(\text{even}) = \frac{3}{6}$ ,  $P(\text{prime AND even}) = \frac{1}{6}$ 

$$P(\text{prime OR even}) = \frac{3}{6} + \frac{3}{6} - \frac{1}{6} = \frac{5}{6}$$

PTS: 2 REF: 080830ia STA: A.S.23 TOP: Theoretical Probability

KEY: not mutually exclusive events

82 ANS: 3

$$P(S) \cdot P(M) = P(S \text{ and } M)$$

$$\frac{3}{5} \cdot P(M) = \frac{3}{10}$$

$$P(M) = \frac{1}{2}$$

PTS: 2 REF: 081024ia STA: A.S.23 TOP: Theoretical Probability

KEY: independent events

83 ANS: 1

$$\frac{1}{8} \times \frac{1}{8} = \frac{1}{64}$$

PTS: 2 REF: 010928ia STA: A.S.23 TOP: Theoretical Probability

KEY: independent events

84 ANS:

$$\frac{3}{8} \cdot P(s_1 < 4) \times P(s_2 = \text{back}) = \frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$$

PTS: 2 REF: 080832ia STA: A.S.23 TOP: Theoretical Probability

KEY: independent events

85 ANS:

$\frac{1}{8}$ . After the English and social studies books are taken, 8 books are left and 1 is an English book.

PTS: 2 REF: 060933ia STA: A.S.18 TOP: Conditional Probability

86 ANS: 3

$$(3-1) \times 2 \times 3 = 12$$

PTS: 2 REF: 080905ia STA: A.N.7 TOP: Conditional Probability

87 ANS: 4

$$5 \times 2 \times 3 = 30$$

PTS: 2 REF: 061002ia STA: A.N.7 TOP: Multiplication Counting Principle

88 ANS: 3

TOP: Permutations

PTS: 2

REF: 060808ia

STA: A.N.8

89 ANS: 1

$${}_4P_4 = 4 \times 3 \times 2 \times 1 = 24$$

PTS: 2 REF: 080816ia STA: A.N.8 TOP: Permutations

90 ANS: 4

$${}_8P_3 = 336$$

PTS: 2 REF: 061026ia STA: A.N.8 TOP: Permutations

91 ANS: 3

$${}_6P_4 = 360$$

PTS: 2 REF: 081028ia STA: A.N.8 TOP: Permutations

92 ANS:

$$60. {}_5P_3 = 60$$

PTS: 2 REF: 060931ia STA: A.N.8 TOP: Permutations

- 93 ANS:  
 $15,600,000, 4,368,000. 10 \times 10 \times 10 \times 26 \times 25 \times 24 = 15,600,000. 10 \times 9 \times 8 \times 26 \times 25 \times 24 = 11,232,000.$   
 $15,600,000 - 11,232,000 = 4,368,000.$

PTS: 4 REF: 011037ia STA: A.N.8 TOP: Permutations

- 94 ANS: 4  
 $25(x - 3) = 25x - 75$

PTS: 2 REF: 060823ia STA: A.A.1 TOP: Expressions

- 95 ANS: 2 PTS: 2 REF: 060904ia STA: A.A.1  
 TOP: Expressions

- 96 ANS: 4  
 $5(x + 4) = 5x + 20$

PTS: 2 REF: 081013ia STA: A.A.1 TOP: Expressions

- 97 ANS: 4  
 $A = lw = (3w - 7)(w) = 3w^2 - 7w$

PTS: 2 REF: 010924ia STA: A.A.1 TOP: Expressions

- 98 ANS: 4 PTS: 2 REF: fall0729ia STA: A.A.2  
 TOP: Expressions

- 99 ANS: 4 PTS: 2 REF: 061016ia STA: A.A.2  
 TOP: Expressions

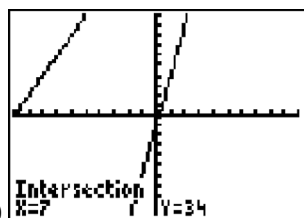
- 100 ANS: 2 PTS: 2 REF: 011027ia STA: A.A.3  
 TOP: Expressions

- 101 ANS: 1 PTS: 2 REF: 081030ia STA: A.A.3  
 TOP: Expressions

- 102 ANS:  
 Not all of the homework problems are equations. The first problem is an expression.

PTS: 2 REF: 080931ia STA: A.A.3 TOP: Expressions

- 103 ANS: 4



$$5p - 1 = 2p + 20$$

$$3p = 21$$

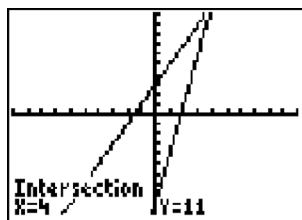
$$p = 7$$

PTS: 2 REF: 080801ia STA: A.A.22 TOP: Solving Equations

- 104 ANS: 2  
 Debbie failed to distribute the 3 properly.

PTS: 2 REF: 011009ia STA: A.A.22 TOP: Solving Equations

105 ANS:



$$4. \quad 3 + 2g = 5g - 9$$

$$12 = 3g$$

$$g = 4$$

PTS: 2

REF: fall0732ia

STA: A.A.22

TOP: Solving Equations

106 ANS: 2

$$\frac{3}{5}(x+2) = x-4$$

$$3(x+2) = 5(x-4)$$

$$3x+6 = 5x-20$$

$$26 = 2x$$

$$x = 13$$

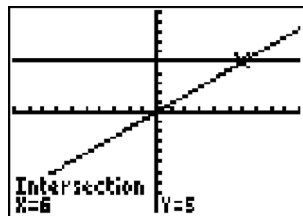
PTS: 2

REF: 080909ia

STA: A.A.25

TOP: Solving Equations with Fractional Expressions

107 ANS: 1



$$\frac{(2x \times 6) + (3 \times x)}{3 \times 6} = 5$$

$$\frac{12x + 3x}{18} = 5$$

$$15x = 90$$

$$x = 6$$

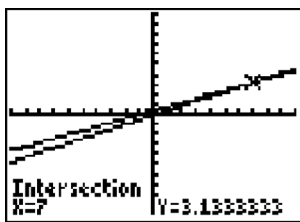
PTS: 2

REF: 060907ia

STA: A.A.25

TOP: Solving Equations with Fractional Expressions

108 ANS: 4



$$\frac{2x}{5} + \frac{1}{3} = \frac{7x-2}{15}$$

$$\frac{(2x \times 3) + (5 \times 1)}{5 \times 3} = \frac{7x-2}{15}$$

$$\frac{6x+5}{15} = \frac{7x-2}{15}$$

$$6x+5 = 7x-2$$

$$x = 7$$

PTS: 2 REF: 080820ia STA: A.A.25

TOP: Solving Equations with Fractional Expressions

109 ANS: 3

$$\frac{x}{3} + \frac{x+1}{2} = x$$

$$\frac{2x+3(x+1)}{6} = x$$

$$5x+3 = 6x$$

$$3 = x$$

PTS: 2 REF: 061019ia STA: A.A.25

TOP: Solving Equations with Fractional Expressions

110 ANS: 2 PTS: 2 REF: 080901ia STA: A.A.4

TOP: Modeling Equations

111 ANS: 2 PTS: 2 REF: 010915ia STA: A.A.5

TOP: Modeling Equations

112 ANS: 4 PTS: 2 REF: 081011ia STA: A.A.5

TOP: Modeling Equations

113 ANS: 4

$$w(w+5) = 36$$

$$w^2 + 5w - 36 = 0$$

PTS: 2 REF: fall0726ia STA: A.A.5 TOP: Modeling Equations

114 ANS: 4

Let  $x$  = youngest brother and  $x + 4$  = oldest brother.  $3x - (x + 4) = 48$ .

$$2x - 4 = 48$$

$$x = 26$$

PTS: 2 REF: 080928ia STA: A.A.6 TOP: Modeling Equations

115 ANS: 4 PTS: 2 REF: 011016ia STA: A.A.23

TOP: Transforming Formulas

116 ANS: 3

$$3ax + b = c$$

$$3ax = c - b$$

$$x = \frac{c - b}{3a}$$

PTS: 2 REF: 080808ia STA: A.A.23 TOP: Transforming Formulas

117 ANS: 2

$$P = 2l + 2w$$

$$P - 2l = 2w$$

$$\frac{P - 2l}{2} = w$$

PTS: 2 REF: 010911ia STA: A.A.23 TOP: Transforming Formulas

118 ANS: 2 PTS: 2 REF: 061023ia STA: A.A.23

TOP: Transforming Formulas

119 ANS: 3

$$a + ar = b + r$$

$$a(1 + r) = b + r$$

$$a = \frac{b + r}{1 + r}$$

PTS: 2 REF: 060913ia STA: A.A.23 TOP: Transforming Formulas

120 ANS: 3

$$0.75 \text{ hours} = 45 \text{ minutes. } \frac{120}{1} = \frac{x}{45}$$

$$x = 5400$$

PTS: 2 REF: 080814ia STA: A.M.1 TOP: Using Rate

121 ANS:

$$2,160 \frac{1,200}{25} = \frac{x}{45}$$

$$25x = 54,000$$

$$x = 2,160$$

PTS: 2 REF: 081032ia STA: A.M.1 TOP: Using Rate

122 ANS:

$$\text{Ann's. } \frac{225}{15} = 15 \text{ mpg is greater than } \frac{290}{23.2} = 12.5 \text{ mpg}$$

PTS: 2 REF: 060831ia STA: A.M.1 TOP: Using Rate

123 ANS: 4

$$\frac{\text{distance}}{\text{time}} = \frac{24}{6} = 4$$

PTS: 2 REF: 010902ia STA: A.M.1 TOP: Speed

124 ANS: 4

$$s = \frac{d}{t} = \frac{150 \text{ m}}{1.5 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} = 6,000 \frac{\text{m}}{\text{hr}}$$

PTS: 2 REF: 061025ia STA: A.M.1 TOP: Speed

125 ANS: 4

$$\frac{5}{45} = \frac{8}{x}$$

$$5x = 360$$

$$x = 72$$

PTS: 2 REF: 060901ia STA: A.M.1 TOP: Speed

126 ANS:

$$111.25 \cdot \frac{\text{distance}}{\text{time}} = \frac{89}{0.8} = 111.25$$

PTS: 2 REF: 080831ia STA: A.M.1 TOP: Speed

127 ANS:

$$\text{Greg's rate of 5.5 is faster than Dave's rate of 5.3. } \frac{\text{distance}}{\text{time}} = \frac{11}{2} = 5.5. \frac{16}{3} = 5.\bar{3}$$

PTS: 3 REF: 080936ia STA: A.M.1 TOP: Speed

128 ANS:

$$50, 1.5, 10. \frac{\text{distance}}{\text{time}} = \frac{60}{1.2} = 50. \frac{\text{distance}}{\text{time}} = \frac{60}{40} = 1.5. \text{ speed} \times \text{time} = 55 \times 2 = 110. 120 - 110 = 10$$

PTS: 3 REF: fall0734ia STA: A.M.1 TOP: Speed

129 ANS: 3

$$F = \frac{9}{5}C + 32 = \frac{9}{5}(15) + 32 = 59$$

PTS: 2 REF: 010901ia STA: A.M.2 TOP: Conversions

130 ANS: 4

$$\frac{344 \text{ m}}{\text{sec}} \times \frac{60 \text{ sec}}{1 \text{ min}} \times \frac{60 \text{ min}}{1 \text{ hr}} = 1,238,400 \frac{\text{m}}{\text{hr}}$$

PTS: 2 REF: 060911ia STA: A.M.2 TOP: Conversions

131 ANS:

16. 12 feet equals 4 yards.  $4 \times 4 = 16$ .

PTS: 2 REF: 011031ia STA: A.M.2 TOP: Conversions

132 ANS: 2

Candidate *B* received 45%.  $45\% \times 1860 = 837$ 

PTS: 2 REF: 081007ia STA: A.N.5 TOP: Percents

133 ANS:

$$\frac{1}{6}, 16.67\%, \$13.50. \frac{18-15}{18} = \frac{1}{6}. 18 \times 0.75 = 13.5$$

PTS: 3 REF: 060835ia STA: A.N.5 TOP: Percents

134 ANS:

$$30.4\%; \text{no}, 23.3\%. \frac{7.50-5.75}{5.75} = 30.4\%. \frac{7.50-5.75}{7.50} = 23.3\%$$

PTS: 3 REF: 080935ia STA: A.N.5 TOP: Percents

135 ANS:

$$d = 6.25h, 250. d = 6.25(40) = 250$$

PTS: 2 REF: 010933ia STA: A.N.5 TOP: Direct Variation

136 ANS: 2

PTS: 2

REF: 080823ia

STA: A.A.32

TOP: Slope

137 ANS: 3

$$m = \frac{4-10}{3-(-6)} = -\frac{2}{3}$$

PTS: 2 REF: fall0716ia STA: A.A.33 TOP: Slope

138 ANS: 3

$$m = \frac{1-(-4)}{-6-4} = -\frac{1}{2}$$

PTS: 2 REF: 060820ia STA: A.A.33 TOP: Slope



139 ANS: 2

$$m = \frac{5-3}{2-7} = -\frac{2}{5}$$

PTS: 2

REF: 010913ia

STA: A.A.33

TOP: Slope

140 ANS: 2

$$m = \frac{5-2}{3-(-2)} = \frac{3}{5}$$

PTS: 2

REF: 061004ia

STA: A.A.33

TOP: Slope

141 ANS: 1

$$m = \frac{4-(-4)}{-5-15} = -\frac{2}{5}$$

PTS: 2

REF: 080915ia

STA: A.A.33

TOP: Slope

142 ANS: 4

$$A(-3,4) \text{ and } B(5,8). m = \frac{4-8}{-3-5} = \frac{-4}{-8} = \frac{1}{2}$$

PTS: 2

REF: 011007ia

STA: A.A.33

TOP: Slope

143 ANS: 2

$$A(-3,8) \text{ and } B(3,6). m = \frac{8-6}{-3-3} = \frac{2}{-6} = -\frac{1}{3}$$

PTS: 2

REF: 081005ia

STA: A.A.33

TOP: Slope

144 ANS: 2

If the car can travel 75 miles on 4 gallons, it can travel 300 miles on 16 gallons.  $\frac{75}{4} = \frac{x}{16}$ .

$$x = 300$$

PTS: 2

REF: 080807ia

STA: A.G.4

TOP: Graphing Linear Functions

145 ANS: 4

$$y = mx + b$$

$$-1 = (2)(3) + b$$

$$b = -7$$

PTS: 2

REF: 080927ia

STA: A.A.34

TOP: Writing Linear Equations

146 ANS: 1

$$y = mx + b$$

$$-6 = (-3)(4) + b$$

$$b = 6$$

PTS: 2

REF: 060922ia

STA: A.A.34

TOP: Writing Linear Equations

147 ANS: 3

PTS: 2

REF: 010910ia

STA: A.A.35

TOP: Writing Linear Equations

148 ANS: 3

$$m = \frac{7-3}{-3-3} = \frac{4}{-6} = -\frac{2}{3} \quad y = mx + b$$

$$3 = -\frac{2}{3}(3) + b$$

$$3 = -2 + b$$

$$5 = b$$

PTS: 2

REF: 011013ia

STA: A.A.35

TOP: Writing Linear Equations

149 ANS: 2

$$m = \frac{5-3}{8-1} = \frac{2}{7} \quad y - y_1 = m(x - x_1)$$

$$y - 5 = \frac{2}{7}(x - 8)$$

PTS: 2

REF: 081029ia

STA: A.A.35

TOP: Writing Linear Equations

150 ANS: 1

$$m = \frac{3-0}{0-2} = -\frac{3}{2}. \text{ Using the given } y\text{-intercept } (0,3) \text{ to write the equation of the line } y = -\frac{3}{2}x + 3.$$

PTS: 2

REF: fall0713ia

STA: A.A.35

TOP: Writing Linear Equations

151 ANS:

$$y = \frac{2}{5}x + 2. \quad m = \frac{4-0}{5-(-5)} = \frac{2}{5}. \quad y = mx + b$$

$$4 = \frac{2}{5}(5) + b$$

$$b = 2$$

PTS: 3

REF: 080836ia

STA: A.A.35

TOP: Writing Linear Equations

152 ANS: 1

$$4y - 2x = 0$$

$$4(-1) - 2(-2) = 0$$

$$-4 + 4 = 0$$

PTS: 2

REF: 011021ia

STA: A.A.39

TOP: Identifying Points on a Line

153 ANS: 4

$$2x - 3y = 9$$

$$2(0) - 3(-3) = 9$$

$$0 + 9 = 9$$

PTS: 2

REF: 081016ia

STA: A.A.39

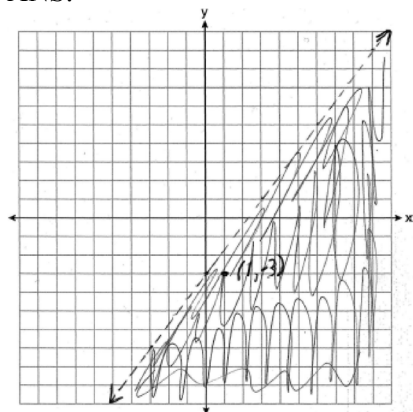
TOP: Identifying Points on a Line

- 154 ANS: 3  
 $2(1)+3=5$
- PTS: 2 REF: 061007ia STA: A.A.39 TOP: Linear Equations
- 155 ANS: 2 PTS: 2 REF: 080810ia STA: A.A.36  
 TOP: Parallel and Perpendicular Lines
- 156 ANS: 1 PTS: 2 REF: 080911ia STA: A.A.36  
 TOP: Parallel and Perpendicular Lines
- 157 ANS: 2 PTS: 2 REF: 081014ia STA: A.A.36  
 TOP: Parallel and Perpendicular Lines
- 158 ANS: 1  
 The slope of both is  $-4$ .
- PTS: 2 REF: 060814ia STA: A.A.38 TOP: Parallel and Perpendicular Lines
- 159 ANS: 1  
 The slope of  $y = 3 - 2x$  is  $-2$ . Using  $m = -\frac{A}{B}$ , the slope of  $4x + 2y = 5$  is  $-\frac{4}{2} = -2$ .
- PTS: 2 REF: 010926ia STA: A.A.38 TOP: Parallel and Perpendicular Lines
- 160 ANS: 1  
 The slope of  $2x - 4y = 16$  is  $\frac{-A}{B} = \frac{-2}{-4} = \frac{1}{2}$
- PTS: 2 REF: 011026ia STA: A.A.38 TOP: Parallel and Perpendicular Lines
- 161 ANS: 2  
 $y - kx = 7$  may be rewritten as  $y = kx + 7$
- PTS: 2 REF: 061015ia STA: A.A.38 TOP: Parallel and Perpendicular Lines
- 162 ANS: 1  
 $3(2m - 1) \leq 4m + 7$   
 $6m - 3 \leq 4m + 7$   
 $2m \leq 10$   
 $m \leq 5$
- PTS: 2 REF: 081002ia STA: A.A.24 TOP: Solving Inequalities
- 163 ANS: 1  
 $-2x + 5 > 17$   
 $-2x > 12$   
 $x < -6$
- PTS: 2 REF: fall0724ia STA: A.A.21 TOP: Interpreting Solutions

- 164 ANS: 4  
 $-4x + 2 > 10$   
 $-4x > 8$   
 $x < -2$
- PTS: 2 REF: 080805ia STA: A.A.21 TOP: Interpreting Solutions
- 165 ANS: 1  
 $\frac{4}{3}x + 5 < 17$   
 $\frac{4}{3}x < 12$   
 $4x < 36$   
 $x < 9$
- PTS: 2 REF: 060914ia STA: A.A.21 TOP: Interpreting Solutions
- 166 ANS: 4  
 $-2(x - 5) < 4$   
 $-2x + 10 < 4$   
 $-2x < -6$   
 $x > 3$
- PTS: 2 REF: 080913ia STA: A.A.21 TOP: Interpreting Solutions
- 167 ANS:  
 $-12. 3\left(\frac{2}{3}x + 3 < -2x - 7\right)$   
 $x + 9 < -6x - 21$   
 $7x < -30$   
 $x < \frac{-30}{7}$
- PTS: 3 REF: 061034ia STA: A.A.21 TOP: Interpreting Solutions
- 168 ANS: 4 PTS: 2 REF: 060906ia STA: A.A.4  
TOP: Modeling Inequalities
- 169 ANS: 1 PTS: 2 REF: 080803ia STA: A.A.4  
TOP: Modeling Inequalities
- 170 ANS: 2 PTS: 2 REF: 011005ia STA: A.A.5  
TOP: Modeling Inequalities
- 171 ANS: 2 PTS: 2 REF: 060821ia STA: A.A.5  
TOP: Modeling Inequalities
- 172 ANS: 4 PTS: 2 REF: fall0715ia STA: A.A.5  
TOP: Modeling Inequalities

- 173 ANS: 1  
 $13.95 + 0.49s \leq 50.00$   
 $0.49s \leq 36.05$   
 $s \leq 73.57$
- PTS: 2 REF: 080904ia STA: A.A.6 TOP: Modeling Inequalities
- 174 ANS: 1  
 $0.07m + 19 \leq 29.50$   
 $0.07m \leq 10.50$   
 $m \leq 150$
- PTS: 2 REF: 010904ia STA: A.A.6 TOP: Modeling Inequalities
- 175 ANS:  
 $10 + 2d \geq 75, 33. 10 + 2d \geq 75$   
 $d \geq 32.5$
- PTS: 3 REF: 060834ia STA: A.A.6 TOP: Modeling Inequalities
- 176 ANS:  
7.  $15x + 22 \geq 120$   
 $x \geq 6.\bar{53}$
- PTS: 3 REF: fall0735ia STA: A.A.6 TOP: Modeling Inequalities
- 177 ANS: 4 PTS: 2 REF: 061028ia STA: A.G.6  
TOP: Linear Inequalities
- 178 ANS: 1 PTS: 2 REF: 060920ia STA: A.G.6  
TOP: Linear Inequalities
- 179 ANS: 2  
The slope of the inequality is  $-\frac{1}{2}$ .
- PTS: 2 REF: fall0720ia STA: A.G.6 TOP: Linear Inequalities

180 ANS:



(1, -3) is in the solution set.  $4(1) - 3(-3) > 9$

$$4 + 9 > 9$$

PTS: 4

REF: 011038ia

STA: A.G.6

TOP: Linear Inequalities

## Integrated Algebra Regents Exam Questions by Performance Indicator: Topic Answer Section

181 ANS: 4

The transformation is a reflection in the  $x$ -axis.

PTS: 2

REF: fall0722ia

STA: A.G.5

TOP: Graphing Absolute Value Functions

182 ANS: 3

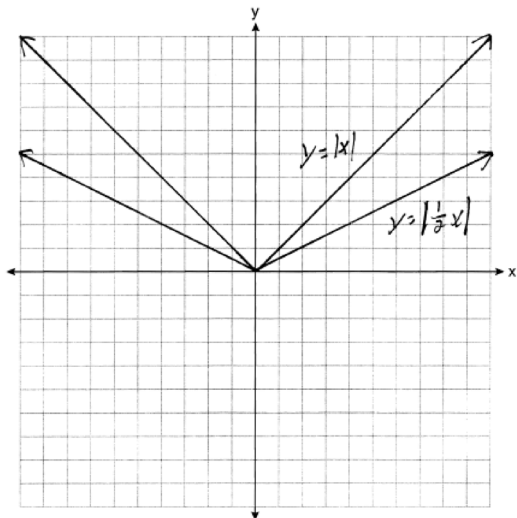
PTS: 2

REF: 011017ia

STA: A.G.5

TOP: Graphing Absolute Value Functions

183 ANS:



. Graph becomes wider as the coefficient approaches 0.

PTS: 3

REF: 061035ia

STA: A.G.5

TOP: Graphing Absolute Value Functions

184 ANS: 2

$$2x^2 + 10x - 12 = 2(x^2 + 5x - 6) = 2(x + 6)(x - 1)$$

PTS: 2

REF: 080806ia

STA: A.A.20

TOP: Factoring Polynomials

185 ANS: 2

PTS: 2

REF: 061027ia

STA: A.A.20

TOP: Factoring Polynomials

186 ANS: 3

PTS: 2

REF: fall0706ia

STA: A.A.19

TOP: Factoring the Difference of Perfect Squares

187 ANS: 1

PTS: 2

REF: 080902ia

STA: A.A.19

TOP: Factoring the Difference of Perfect Squares

188 ANS: 2

PTS: 2

REF: 010909ia

STA: A.A.19

TOP: Factoring the Difference of Perfect Squares

189 ANS: 1

PTS: 2

REF: 060804ia

STA: A.A.19

TOP: Factoring the Difference of Perfect Squares

190 ANS: 2

PTS: 2

REF: 011022ia

STA: A.A.19

TOP: Factoring the Difference of Perfect Squares

191 ANS: 3

PTS: 2

REF: 081008ia

STA: A.A.19

TOP: Factoring the Difference of Perfect Squares

192 ANS:

$$4x(x+3)(x-3). \quad 4x^3 - 36x = 4x(x^2 - 9) = 4x(x+3)(x-3)$$

PTS: 2                      REF: 060932ia              STA: A.A.19  
TOP: Factoring the Difference of Perfect Squares

193 ANS: 3

$$x^2 - 6x = 0$$

$$x(x-6) = 0$$

$$x = 0 \quad x = 6$$

PTS: 2                      REF: 080921ia              STA: A.A.27              TOP: Solving Quadratics by Factoring

194 ANS: 3

$$x^2 - 10x + 21 = 0$$

$$(x-7)(x-3) = 0$$

$$x = 7 \quad x = 3$$

PTS: 2                      REF: 010914ia              STA: A.A.28              TOP: Roots of Quadratics

195 ANS: 4

$$x^2 - 7x + 6 = 0$$

$$(x-6)(x-1) = 0$$

$$x = 6 \quad x = 1$$

PTS: 2                      REF: 060902ia              STA: A.A.28              TOP: Roots of Quadratics

196 ANS:

$$-2, 3. \quad x^2 - x = 6$$

$$x^2 - x - 6 = 0$$

$$(x-3)(x+2) = 0$$

$$x = 3 \text{ or } -2$$

PTS: 3                      REF: 011034ia              STA: A.A.28              TOP: Roots of Quadratics

197 ANS:

$$-15, 2 \quad x^2 + 13x - 30 = 0$$

$$(x+15)(x-2) = 0$$

$$x = -15, 2$$

PTS: 3                      REF: 081036ia              STA: A.A.28              TOP: Roots of Quadratics

198 ANS: 4

PTS: 2                      REF: 060829ia              STA: A.G.5  
TOP: Graphing Quadratic Functions

199 ANS: 1

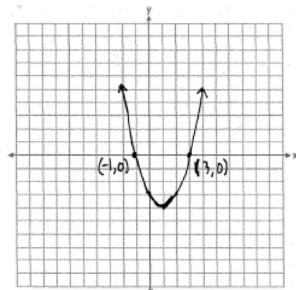
PTS: 2                      REF: 081015ia              STA: A.G.5  
TOP: Graphing Quadratic Functions



200 ANS: 2                   PTS: 2                   REF: 080916ia           STA: A.G.8  
TOP: Solving Quadratics by Graphing

201 ANS: 3                   PTS: 2                   REF: 060924ia           STA: A.G.8  
TOP: Solving Quadratics by Graphing

202 ANS:



PTS: 3                   REF: 060836ia           STA: A.G.8           TOP: Solving Quadratics by Graphing  
203 ANS: 1

$$x^2 - 36 = 5x$$

$$x^2 - 5x - 36 = 0$$

$$(x - 9)(x + 4) = 0$$

$$x = 9$$

PTS: 2                   REF: 061020ia           STA: A.A.8           TOP: Writing Quadratics  
204 ANS:

6, 8, 10. Three consecutive even integers are  $x$ ,  $x + 2$  and  $x + 4$ .  $(x + 2)(x + 4) = 10x + 20$

$$x^2 + 6x + 8 = 10x + 20$$

$$x^2 - 4x - 12 = 0$$

$$(x - 6)(x + 2) = 0$$

$$x = 6$$

PTS: 4                   REF: 011039ia           STA: A.A.8           TOP: Writing Quadratics  
205 ANS: 2

$$l(l - 5) = 24$$

$$l^2 - 5l - 24 = 0$$

$$(l - 8)(l + 3) = 0$$

$$l = 8$$

PTS: 2                   REF: 080817ia           STA: A.A.8           TOP: Geometric Applications of Quadratics

206 ANS:

$$w(w+15) = 54, 3, 18. \quad w(w+15) = 54$$

$$w^2 + 15w - 54 = 0$$

$$(w+18)(w-3) = 0$$

$$w = 3$$

PTS: 4 REF: 060837ia STA: A.A.8 TOP: Geometric Applications of Quadratics

207 ANS: 1 PTS: 2 REF: 060811ia STA: A.G.10

TOP: Identifying the Vertex of a Quadratic Given Graph

208 ANS: 1 PTS: 2 REF: 080813ia STA: A.G.10

TOP: Identifying the Vertex of a Quadratic Given Graph

209 ANS: 2 PTS: 2 REF: 010916ia STA: A.G.10

TOP: Identifying the Vertex of a Quadratic Given Graph

210 ANS: 2 PTS: 2 REF: 011015ia STA: A.G.10

TOP: Identifying the Vertex of a Quadratic Given Graph

211 ANS: 1 PTS: 2 REF: 061005ia STA: A.G.10

TOP: Identifying the Vertex of a Quadratic Given Graph

212 ANS: 1

$$x = \frac{-b}{2a} = \frac{-(-16)}{2(1)} = 8. \quad y = (8)^2 - 16(8) + 63 = -1$$

PTS: 2 REF: 060918ia STA: A.A.41

TOP: Identifying the Vertex of a Quadratic Given Equation

213 ANS: 3

$$x = \frac{-b}{2a} = \frac{-10}{2(-1)} = 5.$$

PTS: 2 REF: 081018ia STA: A.A.41

TOP: Identifying the Vertex of a Quadratic Given Equation

214 ANS:

$$(-2, 11). \quad x = \frac{-b}{2a} = \frac{-(-8)}{2(-2)} = -2$$

$$y = -2(-2)^2 - 8(-2) + 3 = 11$$

PTS: 3 REF: 080934ia STA: A.A.41

TOP: Identifying the Vertex of a Quadratic Given Equation

215 ANS: 2

$$x + 2y = 9$$

$$x - y = 3$$

$$3y = 6$$

$$y = 2$$

PTS: 2 REF: 060925ia STA: A.A.10 TOP: Solving Linear Systems

- 216 ANS: 1  
 $x - 2y = 1$   
 $x + 4y = 7$   
 $-6y = -6$   
 $y = 1$
- PTS: 2 REF: 080920ia STA: A.A.10 TOP: Solving Linear Systems
- 217 ANS: 2  
 $2(x - 3y = -3)$   
 $2x + y = 8$   
 $2x - 6y = -6$   
 $7y = 14$   
 $y = 2$
- PTS: 2 REF: 081021ia STA: A.A.10 TOP: Solving Linear Systems
- 218 ANS: 3  
 $c + 3d = 8 \quad c = 4d - 6$   
 $4d - 6 + 3d = 8 \quad c = 4(2) - 6$   
 $7d = 14 \quad c = 2$   
 $d = 2$
- PTS: 2 REF: 061012ia STA: A.A.10 TOP: Solving Linear Systems
- 219 ANS: 3  
 $5x + 2y = 48$   
 $3x + 2y = 32$   
 $2x = 16$   
 $x = 8$
- PTS: 2 REF: fall0708ia STA: A.A.10 TOP: Solving Linear Systems
- 220 ANS:  
 $(-2, 5). \quad 3x + 2y = 4 \quad 12x + 8y = 16. \quad 3x + 2y = 4$   
 $4x + 3y = 7 \quad 12x + 9y = 21 \quad 3x + 2(5) = 4$   
 $y = 5 \quad 3x = -6$   
 $x = -2$
- PTS: 4 REF: 010937ia STA: A.A.10 TOP: Solving Linear Systems

221 ANS: 2  
 $L + S = 47$   
 $L - S = 15$   
 $2L = 62$   
 $L = 31$

PTS: 2 REF: 060912ia STA: A.A.7 TOP: Writing Linear Systems

222 ANS: 3  
 $b = 42 - r$   $r = 2b + 3$   
 $r = 2b + 3$   $r = 2(42 - r) + 3$   
 $r = 84 - 2r + 3$   
 $3r = 87$   
 $r = 29$

PTS: 2 REF: 060812ia STA: A.A.7 TOP: Writing Linear Systems

223 ANS: 2  
 $s + o = 126$   $s + 2s = 126$   
 $o = 2s$   $s = 42$

PTS: 2 REF: 080811ia STA: A.A.7 TOP: Writing Linear Systems

224 ANS: 2  
 $3c + 4m = 12.50$   
 $3c + 2m = 8.50$   
 $2m = 4.00$   
 $m = 2.00$

PTS: 2 REF: 060806ia STA: A.A.7 TOP: Writing Linear Systems

225 ANS: 1  
 $1P + 2C = 5$   
 $1P + 4C = 6$   
 $2C = 1$   
 $C = 0.5$

PTS: 2 REF: 011003ia STA: A.A.7 TOP: Writing Linear Systems

226 ANS:

$$m = 50¢, p = 15¢. \quad 3m + 2p = 1.80. \quad 9m + 6p = 5.40 \quad . \quad 4(.50) + 6p = 2.90$$

$$4m + 6p = 2.90 \quad 4m + 6p = 2.90 \quad 6p = .90$$

$$5m = 2.50 \quad p = \$0.15$$

$$m = \$0.50$$

PTS: 3 REF: 080837ia STA: A.A.7 TOP: Writing Linear Systems

227 ANS: 1

$$s = f + 60 \quad j = 2f - 50 \quad se = 3f. \quad f + (f + 60) + (2f - 50) + 3f = 1424$$

$$7f + 10 = 1424$$

$$f = 202$$

PTS: 2 REF: 060917ia STA: A.A.7 TOP: Writing Linear Systems

228 ANS: 4 PTS: 2 REF: 080825ia STA: A.A.40

TOP: Systems of Linear Inequalities

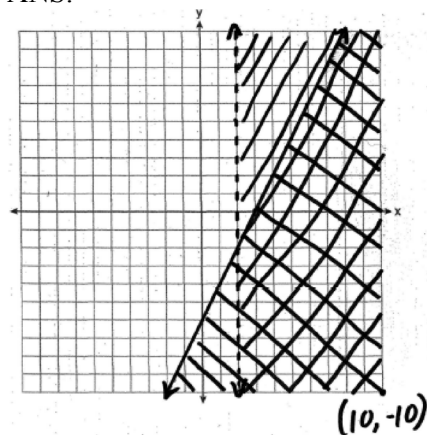
229 ANS: 2 PTS: 2 REF: 011023ia STA: A.A.40

TOP: Systems of Linear Inequalities

230 ANS: 1 PTS: 2 REF: 061010ia STA: A.A.40

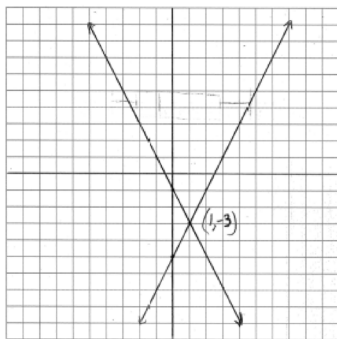
TOP: Systems of Linear Inequalities

231 ANS:



PTS: 4 REF: 010938ia STA: A.G.7 TOP: Systems of Linear Inequalities

232 ANS:



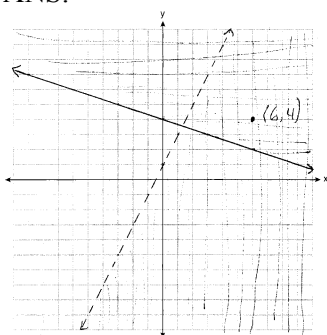
PTS: 4

REF: 080938ia

STA: A.G.7

TOP: Solving Linear Systems

233 ANS:



PTS: 4

REF: 081037ia

STA: A.G.7

TOP: Systems of Linear Inequalities

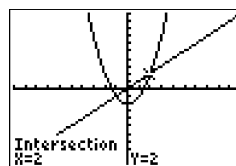
234 ANS: 4

$$x^2 - 2 = x \quad \text{Since } y = x, \text{ the solutions are } (2, 2) \text{ and } (-1, -1).$$

$$x^2 - x - 2 = 0$$

$$(x - 2)(x + 1) = 0$$

$$x = 2 \text{ or } -1$$



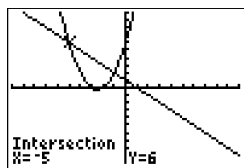
PTS: 2

REF: 060810ia

STA: A.A.11

TOP: Quadratic-Linear Systems

235 ANS: 2



$$x^2 + 5x + 6 = -x + 1 \quad y = -x + 1$$

$$x^2 + 6x + 5 = 0 \quad = -(-5) + 1$$

$$(x + 5)(x + 1) = 0 \quad = 6$$

$$x = -5 \text{ or } -1$$

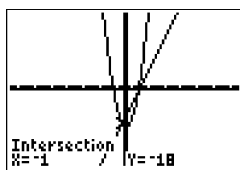
PTS: 2

REF: 080812ia

STA: A.A.11

TOP: Quadratic-Linear Systems

236 ANS: 2



$$x^2 - x - 20 = 3x - 15 \quad y = 3x - 15$$

$$x^2 - 4x - 6 = 0 \quad = 3(-1) - 15$$

$$(x - 5)(x + 1) = 0 \quad = -18$$

$$x = 5 \text{ or } -1$$

PTS: 2

REF: 010922ia

STA: A.A.11

TOP: Quadratic-Linear Systems

237 ANS: 2

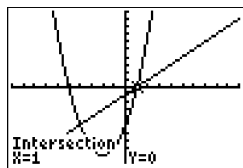
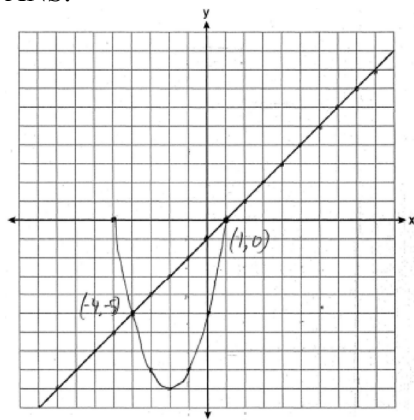
PTS: 2

REF: 011012ia

STA: A.G.9

TOP: Quadratic-Linear Systems

238 ANS:



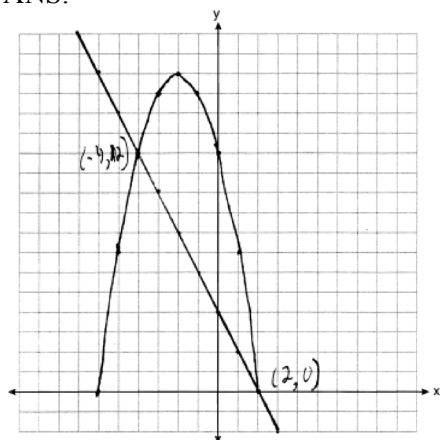
PTS: 4

REF: 080839ia

STA: A.G.9

TOP: Quadratic-Linear Systems

239 ANS:



PTS: 4      REF: 061039ia      STA: A.G.9      TOP: Quadratic-Linear Systems

240 ANS: 1

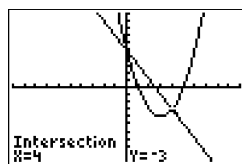
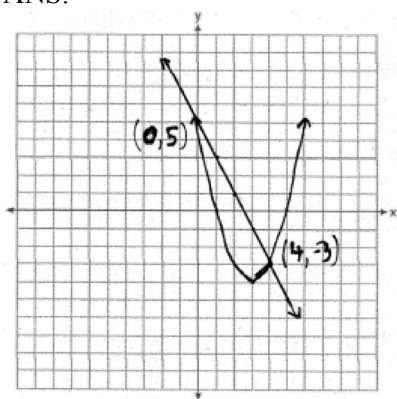
$$2y - 2x = 10 \quad \text{axis of symmetry: } x = \frac{-b}{2a} = \frac{-2}{2(1)} = -1$$

$$2y = 2x + 10$$

$$y = x + 5$$

PTS: 2      REF: 081010ia      STA: A.G.9      TOP: Quadratic-Linear Systems

241 ANS:

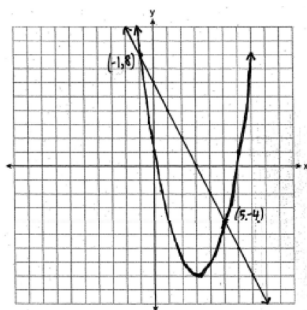


X	Y <sub>1</sub>	Y <sub>2</sub>
0	5	5
1	4	6
2	3	7
3	2	8
4	1	9
5	0	10
6	-1	11
7	-2	12
8	-3	13
9	-4	14
10	-5	15

PTS: 4      REF: fall0738ia      STA: A.G.9      TOP: Quadratic-Linear Systems



242 ANS:



- PTS: 4      REF: 060939ia      STA: A.G.9      TOP: Quadratic-Linear Systems
- 243 ANS: 3      PTS: 2      REF: 061003ia      STA: A.A.13  
TOP: Addition and Subtraction of Polynomials      KEY: addition
- 244 ANS: 2      PTS: 2      REF: 060923ia      STA: A.A.13  
TOP: Addition and Subtraction of Polynomials      KEY: subtraction
- 245 ANS: 3      PTS: 2      REF: 080819ia      STA: A.A.13  
TOP: Addition and Subtraction of Polynomials      KEY: subtraction
- 246 ANS: 1      PTS: 2      REF: 060807ia      STA: A.A.13  
TOP: Multiplication of Polynomials
- 247 ANS: 3

$$\frac{12x^3 - 6x^2 + 2x}{2x} = \frac{2x(6x^2 - 3x + 1)}{2x} = 6x^2 - 3x + 1$$

- PTS: 2      REF: 011011ia      STA: A.A.14      TOP: Rational Expressions
- 248 ANS: 2

$$\frac{9x^4 - 27x^6}{3x^3} = \frac{9x^4(1 - 3x^2)}{3x^3} = 3x(1 - 3x^2)$$

- PTS: 2      REF: fall0718ia      STA: A.A.14      TOP: Rational Expressions
- 249 ANS: 2

$$\frac{2x^2 - 12x}{x - 6} = \frac{2x(x - 6)}{x - 6} = 2x$$

- PTS: 2      REF: 060824ia      STA: A.A.14      TOP: Rational Expressions
- 250 ANS:

$$3a^2b^2 - 6a \frac{45a^4b^3 - 90a^3b}{15a^2b} = \frac{45a^4b^3}{15a^2b} - \frac{90a^3b}{15a^2b} = 3a^2b^2 - 6a$$

- PTS: 2      REF: 081031ia      STA: A.A.14      TOP: Rational Expressions
- 251 ANS: 4      PTS: 2      REF: 011020ia      STA: A.A.12  
TOP: Multiplication of Powers
- 252 ANS: 4      PTS: 2      REF: 080903ia      STA: A.A.12  
TOP: Multiplication of Powers

253 ANS: 4

$$\frac{2^6}{2^1} = 2^5$$

PTS: 2 REF: 060813ia STA: A.A.12 TOP: Division of Powers

254 ANS: 1

TOP: Division of Powers

PTS: 2

REF: 060903ia

STA: A.A.12

255 ANS: 4

TOP: Division of Powers

PTS: 2

REF: 061018ia

STA: A.A.12

256 ANS: 3

$$\frac{(2x^3)(8x^5)}{4x^6} = \frac{16x^8}{4x^6} = 4x^2$$

PTS: 2 REF: fall0703ia STA: A.A.12 TOP: Division of Powers

257 ANS:

$$\frac{3k^2m^6}{4}$$

PTS: 2 REF: 010932ia STA: A.A.12 TOP: Division of Powers

258 ANS: 4

TOP: Powers of Powers

PTS: 2

REF: 080827ia

STA: A.A.12

259 ANS: 4

TOP: Operations with Scientific Notation

PTS: 2

REF: 060927ia

STA: A.N.4

260 ANS: 4

TOP: Operations with Scientific Notation

PTS: 2

REF: 010927ia

STA: A.N.4

261 ANS: 2

TOP: Operations with Scientific Notation

PTS: 2

REF: fall0725ia

STA: A.N.4

262 ANS: 4

$$\frac{9.2 \times 10^6}{2.3 \times 10^2} = 4 \times 10^4$$

PTS: 2 REF: 081006ia STA: A.N.4 TOP: Operations with Scientific Notation

263 ANS: 2

TOP: Exponential Functions

PTS: 2

REF: 060830ia

STA: A.A.9

264 ANS: 4

TOP: Exponential Functions

PTS: 2

REF: 010908ia

STA: A.A.9

265 ANS: 2

$$R = 0.5^{d-1}$$

PTS: 2 REF: 011006ia STA: A.A.9 TOP: Exponential Functions

266 ANS: 3

$$35000(1 - 0.05)^4 \approx 28507.72$$

PTS: 2 REF: fall0719ia STA: A.A.9 TOP: Exponential Functions

267 ANS: 3

$$500(1+0.06)^3 \approx 596$$

PTS: 2

REF: 080929ia

STA: A.A.9

TOP: Exponential Functions

268 ANS: 1

$$15000(1.2)^{\frac{6}{3}} = 21,600. \quad 21,600 - 15,000 = 6,600$$

PTS: 2

REF: 061030ia

STA: A.A.9

TOP: Exponential Functions

269 ANS:

$$5,583.86. \quad A = P(1+R)^t = 5000(1+0.0375)^3 \approx 5583.86$$

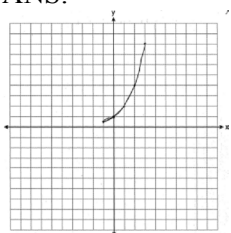
PTS: 3

REF: 060935ia

STA: A.A.9

TOP: Exponential Functions

270 ANS:



The graph will never intersect the  $x$ -axis as  $2^x > 0$  for all values of  $x$ .

PTS: 3

REF: 080835ia

STA: A.G.4

TOP: Graphing Exponential Functions

271 ANS: 2

$$\sqrt{32} = \sqrt{16}\sqrt{2} = 4\sqrt{2}$$

PTS: 2

REF: 060910ia

STA: A.N.2

TOP: Simplifying Radicals

272 ANS: 3

$$\sqrt{72} = \sqrt{36}\sqrt{2} = 6\sqrt{2}$$

PTS: 2

REF: 010920ia

STA: A.N.2

TOP: Simplifying Radicals

273 ANS:

$$30\sqrt{2}. \quad 5\sqrt{72} = 5\sqrt{36}\sqrt{2} = 30\sqrt{2}$$

PTS: 2

REF: fall0731ia

STA: A.N.2

TOP: Simplifying Radicals

274 ANS: 2

$$5\sqrt{20} = 5\sqrt{4}\sqrt{5} = 10\sqrt{5}$$

PTS: 2

REF: 080922ia

STA: A.N.2

TOP: Simplifying Radicals

275 ANS: 1

$$\frac{\sqrt{32}}{4} = \frac{\sqrt{16}\sqrt{2}}{4} = \sqrt{2}$$

PTS: 2

REF: 060828ia

STA: A.N.2

TOP: Simplifying Radicals

276 ANS:

$$-3\sqrt{48} = -3\sqrt{16}\sqrt{3} = -12\sqrt{3}$$

PTS: 2 REF: 081033ia STA: A.N.2 TOP: Simplifying Radicals

277 ANS: 4

$$6\sqrt{50} + 6\sqrt{2} = 6\sqrt{25}\sqrt{2} + 6\sqrt{2} = 30\sqrt{2} + 6\sqrt{2} = 36\sqrt{2}$$

PTS: 2 REF: 011024ia STA: A.N.3 TOP: Operations with Radicals  
KEY: addition

278 ANS: 3

$$\sqrt{72} - 3\sqrt{2} = \sqrt{36}\sqrt{2} - 3\sqrt{2} = 6\sqrt{2} - 3\sqrt{2} = 3\sqrt{2}$$

PTS: 2 REF: 061008ia STA: A.N.3 TOP: Operations with Radicals  
KEY: subtraction

279 ANS:

$$60 - 42\sqrt{5}. \quad 3\sqrt{20}(2\sqrt{5} - 7) = 6\sqrt{100} - 21\sqrt{20} = 60 - 21\sqrt{4}\sqrt{5} = 60 - 42\sqrt{5}$$

PTS: 3 REF: 080834ia STA: A.N.3 TOP: Operations with Radicals  
KEY: multiplication

280 ANS: 2

$$\frac{x^2 - 2x - 15}{x^2 + 3x} = \frac{(x-5)(x+3)}{x(x+3)} = \frac{x-5}{x}$$

PTS: 2 REF: 060921ia STA: A.A.16 TOP: Rational Expressions  
KEY:  $a > 0$ 

281 ANS: 4

$$\frac{25x - 125}{x^2 - 25} = \frac{25(x-5)}{(x+5)(x-5)} = \frac{25}{x+5}$$

PTS: 2 REF: 080821ia STA: A.A.16 TOP: Rational Expressions  
KEY:  $a > 0$ 282 ANS: 3 PTS: 2 REF: 060817ia STA: A.A.15  
TOP: Undefined Rationals283 ANS: 4 PTS: 2 REF: 060916ia STA: A.A.15  
TOP: Undefined Rationals284 ANS: 1 PTS: 2 REF: fall0728ia STA: A.A.15  
TOP: Undefined Rationals285 ANS: 2 PTS: 2 REF: 010925ia STA: A.A.15  
TOP: Undefined Rationals

286 ANS: 3

$$x^2 - 9 = 0$$

$$(x+3)(x-3) = 0$$

$$x = \pm 3$$

PTS: 2 REF: 061014ia STA: A.A.15 TOP: Undefined Rationals

287 ANS: 1

$$x^2 + 7x + 10 = 0$$

$$(x+5)(x+2) = 0$$

$$x = -5 \text{ or } -2$$

PTS: 2

REF: 080918ia

STA: A.A.15

TOP: Undefined Rationals

288 ANS: 4

$$\frac{x^2 - 1}{x + 1} \cdot \frac{x + 3}{3x - 3} = \frac{(x + 1)(x - 1)}{x + 1} \cdot \frac{x + 3}{3(x - 1)} = \frac{x + 3}{3}$$

PTS: 2

REF: 060815ia

STA: A.A.18

TOP: Multiplication and Division of Rationals

289 ANS: 1

$$\frac{4x}{x - 1} \cdot \frac{x^2 - 1}{3x + 3} = \frac{4x}{x - 1} \cdot \frac{(x + 1)(x - 1)}{3(x + 1)} = \frac{4x}{3}$$

PTS: 2

REF: 080826ia

STA: A.A.18

TOP: Multiplication and Division of Rationals

290 ANS:

$$\frac{3}{4x - 8} \cdot \frac{3x + 6}{4x + 12} \div \frac{x^2 - 4}{x + 3} = \frac{3(x + 2)}{4(x + 3)} \cdot \frac{x + 3}{(x + 2)(x - 2)} = \frac{3}{4(x - 2)}$$

PTS: 3

REF: 010935ia

STA: A.A.18

TOP: Multiplication and Division of Rationals

291 ANS:

$$\frac{x - 7}{3x} \cdot \frac{2x^2 - 8x - 42}{6x^2} \div \frac{x^2 - 9}{x^2 - 3x} = \frac{2(x^2 - 4x - 21)}{6x^2} \cdot \frac{x(x - 3)}{(x + 3)(x - 3)} = \frac{(x - 7)(x + 3)}{3x} \cdot \frac{1}{x + 3} = \frac{x - 7}{3x}$$

PTS: 4

REF: 080937ia

STA: A.A.18

TOP: Multiplication and Division of Rationals

292 ANS:

$$\frac{x^2 + 9x + 14}{x^2 - 49} \div \frac{3x + 6}{x^2 + x - 56} = \frac{(x + 7)(x + 2)}{(x + 7)(x - 7)} \cdot \frac{(x + 8)(x - 7)}{3(x + 2)} = \frac{x + 8}{3}$$

PTS: 4

REF: 061037ia

STA: A.A.18

TOP: Multiplication and Division of Rationals

293 ANS: 4

$$\frac{(d \times 3) + (2 \times 2d)}{2 \times 3} = \frac{3d + 4d}{6} = \frac{7d}{6}$$

PTS: 2

REF: fall0727ia

STA: A.A.17

TOP: Addition and Subtraction of Rationals

294 ANS: 2

$$\frac{2}{3x} + \frac{4}{3x} = \frac{9x + 8x}{6x^2} = \frac{17x}{6x^2} = \frac{17}{6x}$$

PTS: 2

REF: 080917ia

STA: A.A.17

TOP: Addition and Subtraction of Rationals

295 ANS: 1

PTS: 2

REF: 061024ia

STA: A.A.17

TOP: Addition and Subtraction of Rationals

296 ANS: 4                   PTS: 2                   REF: 011025ia                   STA: A.A.17  
TOP: Addition and Subtraction of Rationals

297 ANS: 2

$$\frac{6}{5x} - \frac{2}{3x} = \frac{18x - 10x}{15x^2} = \frac{8x}{15x^2} = \frac{8}{15x}$$

PTS: 2                   REF: 010921ia                   STA: A.A.17                   TOP: Addition and Subtraction of Rationals

298 ANS: 2

$$\frac{6}{4a} - \frac{2}{3a} = \frac{18a - 8a}{12a^2} = \frac{10a}{12a^2} = \frac{5}{6a}$$

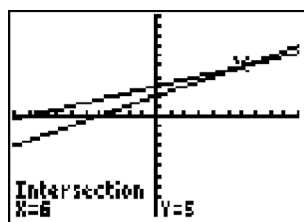
PTS: 2                   REF: 060929ia                   STA: A.A.17                   TOP: Addition and Subtraction of Rationals

299 ANS: 3

$$\frac{2+x}{5x} - \frac{x-2}{5x} = \frac{2+x-x+2}{5x} = \frac{4}{5x}$$

PTS: 2                   REF: 081027ia                   STA: A.A.17                   TOP: Addition and Subtraction of Rationals

300 ANS: 3



$$\frac{k+4}{2} = \frac{k+9}{3}$$

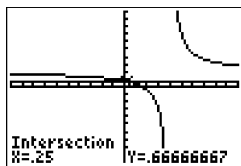
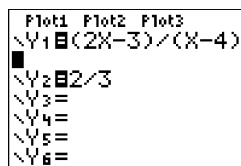
$$3(k+4) = 2(k+9)$$

$$3k + 12 = 2k + 18$$

$$k = 6$$

PTS: 2                   REF: 010906ia                   STA: A.A.26                   TOP: Solving Rationals

301 ANS: 2



$$\frac{2x-3}{x-4} = \frac{2}{3}$$

$$3(2x-3) = 2(x-4)$$

$$6x - 9 = 2x - 8$$

$$4x = 1$$

$$x = \frac{1}{4}$$

PTS: 2                   REF: 081012ia                   STA: A.A.26                   TOP: Solving Rationals

302 ANS: 1

$$\frac{2}{x} - 3 = \frac{26}{x}$$

$$-3 = \frac{24}{x}$$

$$x = -8$$

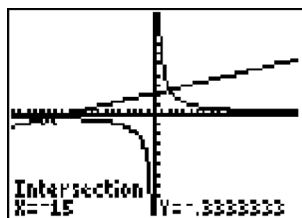
PTS: 2

REF: 010918ia

STA: A.A.26

TOP: Solving Rationals

303 ANS: 4



$$\frac{5}{x} = \frac{x+13}{6}$$

$$x^2 + 13x = 30$$

$$x^2 + 13x - 30 = 0$$

$$(x+15)(x-2) = 0$$

$$x = -15 \text{ or } 2$$

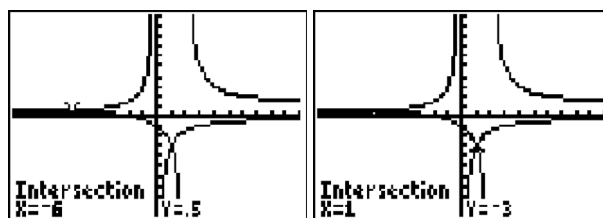
PTS: 2

REF: 060826ia

STA: A.A.26

TOP: Solving Rationals

304 ANS: 4



$$\frac{x+2}{x-2} = \frac{-3}{x}$$

$$x(x+2) = -3(x-2)$$

$$x^2 + 2x = -3x + 6$$

$$x^2 + 5x - 6 = 0$$

$$(x+6)(x-1) = 0$$

$$x = -6 \text{ or } 1$$

PTS: 2

REF: 011028ia

STA: A.A.26

TOP: Solving Rationals

305 ANS:

$$6, -2. \quad \frac{x+1}{x} = \frac{-7}{x-12}$$

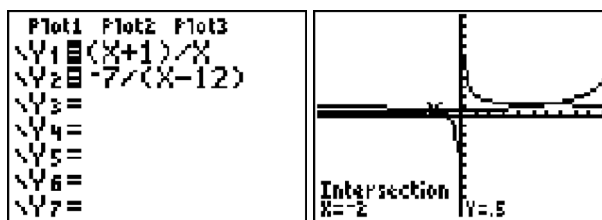
$$(x+1)(x-12) = -7x$$

$$x^2 - 11x - 12 = -7x$$

$$x^2 - 4x - 12 = 0$$

$$(x-6)(x+2) = 0$$

$$x = 6 \text{ or } -2$$



- PTS: 4 REF: fall0739ia STA: A.A.26 TOP: Solving Rationals
- 306 ANS: 1 PTS: 2 REF: 060801ia STA: A.G.4  
TOP: Families of Functions
- 307 ANS: 1 PTS: 2 REF: 010905ia STA: A.G.4  
TOP: Families of Functions
- 308 ANS: 4 PTS: 2 REF: 081025ia STA: A.G.4  
TOP: Families of Functions
- 309 ANS: 4 PTS: 2 REF: fall0717ia STA: A.G.4  
TOP: Families of Functions
- 310 ANS: 3 PTS: 2 REF: 080925ia STA: A.G.4  
TOP: Identifying the Equation of a Graph
- 311 ANS: 4 PTS: 2 REF: fall0730ia STA: A.G.3  
TOP: Defining Functions
- 312 ANS: 4 PTS: 2 REF: 010930ia STA: A.G.3  
TOP: Defining Functions
- 313 ANS: 4 PTS: 2 REF: 061013ia STA: A.G.3  
TOP: Defining Functions
- 314 ANS: 3 PTS: 2 REF: 060919ia STA: A.G.3  
TOP: Defining Functions
- 315 ANS: 3  
An element of the domain, 1, is paired with two different elements of the range, 3 and 7.

- PTS: 2 REF: 080919ia STA: A.G.3 TOP: Defining Functions
- 316 ANS: 4  
In (4), each element in the domain corresponds to a unique element in the range.

PTS: 2 REF: 011018ia STA: A.G.3 TOP: Defining Functions



- 317 ANS: 3  
 $3^2 + 5^2 = x^2$   
 $34 = x^2$   
 $\sqrt{34} = x$
- PTS: 2 REF: 060909ia STA: A.A.45 TOP: Pythagorean Theorem
- 318 ANS: 1  
 $8^2 + 15^2 = c^2$   
 $c^2 = 289$   
 $c = 17$
- PTS: 2 REF: 080906ia STA: A.A.45 TOP: Pythagorean Theorem
- 319 ANS: 1  
 $30^2 + 40^2 = c^2$ . 30, 40, 50 is a multiple of 3, 4, 5.  
 $2500 = c^2$   
 $50 = c$
- PTS: 2 REF: fall0711ia STA: A.A.45 TOP: Pythagorean Theorem
- 320 ANS: 2  
 $\sqrt{5^2 + 7^2} \approx 8.6$
- PTS: 2 REF: 081004ia STA: A.A.45 TOP: Pythagorean Theorem
- 321 ANS: 3 PTS: 2 REF: 060825ia STA: A.A.45 TOP: Pythagorean Theorem
- 322 ANS: 4  
 $16^2 + b^2 = 34^2$   
 $b^2 = 900$   
 $b = 30$
- PTS: 2 REF: 080809ia STA: A.A.45 TOP: Pythagorean Theorem
- 323 ANS: 2  
 $\sin U = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{15}{17}$
- PTS: 2 REF: 010919ia STA: A.A.42 TOP: Trigonometric Ratios
- 324 ANS: 2  
 $\tan B = \frac{\text{opposite}}{\text{adjacent}} = \frac{8}{15} = 0.5\bar{3}$
- PTS: 2 REF: 081026ia STA: A.A.42 TOP: Trigonometric Ratios

325 ANS: 3

$$\cos A = \frac{\text{adjacent}}{\text{hypotenuse}} = \frac{15}{17}$$

PTS: 2

REF: 011008ia

STA: A.A.42

TOP: Trigonometric Ratios

326 ANS: 1

$$\sin C = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{13}{85}$$

PTS: 2

REF: fall0721ia

STA: A.A.42

TOP: Trigonometric Ratios

327 ANS: 2

$$\tan A = \frac{\text{opposite}}{\text{adjacent}} = \frac{14}{48}$$

PTS: 2

REF: 061009ia

STA: A.A.42

TOP: Trigonometric Ratios

328 ANS: 3

$$\cos 30 = \frac{x}{24}$$

$$x \approx 21$$

PTS: 2

REF: 010912ia

STA: A.A.44

TOP: Using Trigonometry to Find a Side

329 ANS:

$$39, 63. \tan 52 = \frac{50}{x} \quad \sin 52 = \frac{50}{x}$$

$$x \approx 39 \quad x \approx 63$$

PTS: 4

REF: 060937ia

STA: A.A.44

TOP: Using Trigonometry to Find a Side

330 ANS: 2

$$\tan 32 = \frac{x}{25}$$

$$x \approx 15.6$$

PTS: 2

REF: 080914ia

STA: A.A.44

TOP: Using Trigonometry to Find a Side

331 ANS:

$$84, 71 \quad \sin 50 = \frac{x}{110} \quad \cos 50 = \frac{y}{110}$$

$$x \approx 84 \quad y \approx 71$$

PTS: 4

REF: 081039ia

STA: A.A.44

TOP: Using Trigonometry to Find a Side

332 ANS: 1

PTS: 2

REF: 080824ia

STA: A.A.43

TOP: Using Trigonometry to Find an Angle

333 ANS: 2

$$\sin A = \frac{8}{12}$$

$$A \approx 42$$

PTS: 2 REF: 060816ia STA: A.A.43 TOP: Using Trigonometry to Find an Angle

334 ANS: 3

$$\sin A = \frac{10}{16} \quad B = 180 - (90 + 38.7) = 51.3. \quad \text{A } 90^\circ \text{ angle is not acute.}$$

$$A \approx 38.7$$

PTS: 2 REF: 080829ia STA: A.A.43 TOP: Using Trigonometry to Find an Angle

335 ANS:

$$\sin x = \frac{30}{50}$$

$$x = \sin^{-1} \frac{3}{5}$$

$$x \approx 37$$

PTS: 2 REF: 061033ia STA: A.A.43 TOP: Using Trigonometry to Find an Angle

336 ANS:

$$53. \sin A = \frac{16}{20}$$

$$A \approx 53$$

PTS: 2 REF: 011032ia STA: A.A.43 TOP: Using Trigonometry to Find an Angle

337 ANS: 1

PTS: 2

REF: 080924ia

STA: A.G.1

TOP: Compositions of Polygons and Circles

338 ANS:

33.4. Serena needs 24 (9+6+9) feet of fencing to surround the rectangular portion of the garden. The length of the fencing needed for the semicircular portion of the garden is  $\frac{1}{2} \pi d = 3\pi \approx 9.4$  feet.

PTS: 2 REF: fall0733ia STA: A.G.1 TOP: Compositions of Polygons and Circles

339 ANS:

$$50. 12 + 10 + 12 + \frac{1}{2} (10\pi) \approx 50$$

PTS: 2 REF: 010931ia STA: A.G.1 TOP: Compositions of Polygons and Circles

340 ANS: 2

PTS: 2

REF: 080815ia

STA: A.G.1

TOP: Compositions of Polygons and Circles

341 ANS: 2

$$A = lw + \frac{\pi r^2}{2} = 6 \cdot 5 + \frac{\pi \cdot 3^2}{2} \approx 44.1$$

PTS: 2 REF: 061029ia STA: A.G.1 TOP: Compositions of Polygons and Circles

342 ANS:

$$36 - 9\pi. \quad 15.6. \quad \text{Area of square} - \text{area of 4 quarter circles. } (3 + 3)^2 - 3^2\pi = 36 - 9\pi$$

PTS: 2 REF: 060832ia STA: A.G.1 TOP: Compositions of Polygons and Circles

343 ANS: 2

shaded = whole - unshaded

= rectangle-triangle

$$= lw - \frac{1}{2}bh$$

$$= 15 \times 6 - \frac{1}{2} \times 15 \times 4.6$$

$$= 90 - 34.5$$

$$= 55.5$$

PTS: 2 REF: 081019ia STA: A.G.1 TOP: Compositions of Polygons and Circles

344 ANS:

56. If the circumference of circle  $O$  is  $16\pi$  inches, the diameter,  $\overline{AD}$ , is 16 inches and the length of  $\overline{BC}$  is 12 inches  $\frac{3}{4} \times 16$ . The area of trapezoid  $ABCD$  is  $\frac{1}{2} \times 4(12 + 16) = 56$ .

PTS: 3 REF: 060934ia STA: A.G.1 TOP: Compositions of Polygons and Circles

345 ANS: 2

$$1.5^3 = 3.375$$

PTS: 2 REF: 060809ia STA: A.G.2 TOP: Volume

346 ANS:

$$5,112. \quad (12 \times 30 \times 16) - (6 \times 12 \times 9) = 5112$$

PTS: 2 REF: 080932ia STA: A.G.2 TOP: Volume

347 ANS: 4

$$V = \pi r^2 h = \pi \cdot 6^2 \cdot 15 \approx 1696.5$$

PTS: 2 REF: fall0712ia STA: A.G.2 TOP: Volume

348 ANS:

$\frac{38}{\pi}, 2.$   $V = \pi r^2 h$  .  $\frac{36}{\left(\frac{38}{\pi}\right)} \approx 2.97$ . Three cans will not fit. The maximum number is 2.

$$342 = \pi \left(\frac{6}{2}\right)^2 h$$

$$\frac{342}{9\pi} = h$$

$$\frac{38}{\pi} = h$$

PTS: 3 REF: 010936ia STA: A.G.2 TOP: Volume

349 ANS: 4

$$SA = 2lw + 2hw + 2lh = 2(2)(3) + 2(4)(3) + 2(2)(4) = 52$$

PTS: 2 REF: 011029ia STA: A.G.2 TOP: Surface Area

350 ANS: 4

$$SA = 2lw + 2hw + 2lh = 2(3)(1.5) + 2(2)(1.5) + 2(3)(2) = 27$$

PTS: 2 REF: 060827ia STA: A.G.2 TOP: Surface Area

351 ANS:

$$80, 136 \quad V = lwh = 10 \cdot 2 \cdot 4 = 80 \quad SA = 2lw + 2hw + 2lh = 2 \cdot 10 \cdot 2 + 2 \cdot 4 \cdot 2 + 2 \cdot 10 \cdot 4 = 136$$

PTS: 3 REF: 081035ia STA: A.G.2 TOP: Surface Area