

A.A.6: Modeling Inequalities 1: Analyze and solve verbal problems whose solution requires solving a linear equation in one variable or linear inequality in one variable

- 1 If five times a number is less than 55, what is the greatest possible integer value of the number?
 - 1) 12
 - 2) 11
 - 3) 10
 - 4) 9
- 2 Jason's part-time job pays him \$155 a week. If he has already saved \$375, what is the minimum number of weeks he needs to work in order to have enough money to buy a dirt bike for \$900?
 - 1) 8
 - 2) 9
 - 3) 3
 - 4) 4
- 3 An online music club has a one-time registration fee of \$13.95 and charges \$0.49 to buy each song. If Emma has \$50.00 to join the club and buy songs, what is the maximum number of songs she can buy?
 - 1) 73
 - 2) 74
 - 3) 130
 - 4) 131
- 4 Tamara has a cell phone plan that charges \$0.07 per minute plus a monthly fee of \$19.00. She budgets \$29.50 per month for total cell phone expenses without taxes. What is the maximum number of minutes Tamara could use her phone each month in order to stay within her budget?
 - 1) 150
 - 2) 271
 - 3) 421
 - 4) 692
- 5 A prom ticket at Smith High School is \$120. Tom is going to save money for the ticket by walking his neighbor's dog for \$15 per week. If Tom already has saved \$22, what is the minimum number of weeks Tom must walk the dog to earn enough to pay for the prom ticket?
- 6 Chelsea has \$45 to spend at the fair. She spends \$20 on admission and \$15 on snacks. She wants to play a game that costs \$0.65 per game. Write an inequality to find the maximum number of times, x , Chelsea can play the game. Using this inequality, determine the maximum number of times she can play the game.
- 7 Peter begins his kindergarten year able to spell 10 words. He is going to learn to spell 2 new words every day. Write an inequality that can be used to determine how many days, d , it takes Peter to be able to spell *at least* 75 words. Use this inequality to determine the minimum number of whole days it will take for him to be able to spell *at least* 75 words.
- 8 Tony makes a phone call at a pay phone. The charge is 25 cents for the first four minutes, and 10 cents for each additional minute. Tony has \$2.10 in change in his pocket. Write an inequality that can be used to find m , the maximum number of minutes that Tony can talk on the phone. Solve this inequality algebraically to find the maximum number of whole minutes he can talk on the phone.

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Answer Section

1 ANS: 3

$$5x < 55$$

$$x < 11$$

REF: 061211ia

2 ANS: 4

$$375 + 155w \geq 900$$

$$155w \geq 525$$

$$w \geq 3.4$$

REF: 081206ia

3 ANS: 1

$$13.95 + 0.49s \leq 50.00$$

$$0.49s \leq 36.05$$

$$s \leq 73.57$$

REF: 080904ia

4 ANS: 1

$$0.07m + 19 \leq 29.50$$

$$0.07m \leq 10.50$$

$$m \leq 150$$

REF: 010904ia

5 ANS:

$$7. \quad 15x + 22 \geq 120$$

$$x \geq 6.\overline{53}$$

REF: fall0735ia

6 ANS:

$$0.65x + 35 \leq 45$$

$$0.65x \leq 10$$

$$x \leq 15$$

REF: 061135ia

7 ANS:

$$10 + 2d \geq 75, \quad 33. \quad 10 + 2d \geq 75$$

$$d \geq 32.5$$

REF: 060834ia

8 ANS:

$$0.25 + 0.10(m - 4) \leq 2.10 \quad 22 \text{ minutes}$$

$$0.10(m - 4) \leq 1.85$$

$$m - 4 \leq 18.5$$

$$m \leq 22.5$$

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