Regents Exam Questions
N.Q.A.1: Conversions 1a
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Name: _____

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1 Peyton is a sprinter who can run the 40-yard dash in 4.5 seconds. He converts his speed into miles per hour, as shown below.

$$\frac{40\text{ yd}}{4.5\text{ sec}} \cdot \frac{3\text{ ft}}{1\text{ yd}} \cdot \frac{5280\text{ ft}}{1\text{ mi}} \cdot \frac{60\text{ sec}}{1\text{ min}} \cdot \frac{60\text{ min}}{1\text{ hr}}$$

Which ratio is *incorrectly* written to convert his speed?

1) $\frac{3\text{ ft}}{1\text{ yd}}$
2) $\frac{5280\text{ ft}}{1\text{ mi}}$
3) $\frac{60\text{ sec}}{1\text{ min}}$
4) $\frac{60\text{ min}}{1\text{ hr}}$

2 Which expression can be used to change 75 kilometers per hour to meters per minute?

1) $\frac{75\text{ km}}{1\text{ hr}} \times \frac{1\text{ km}}{1{,}000\text{ m}} \times \frac{1\text{ hr}}{60\text{ min}}$
2) $\frac{75\text{ km}}{1\text{ hr}} \times \frac{1\text{ km}}{1{,}000\text{ m}} \times \frac{60\text{ min}}{1\text{ hr}}$
3) $\frac{75\text{ km}}{1\text{ hr}} \times \frac{1{,}000\text{ m}}{1\text{ km}} \times \frac{1\text{ hr}}{60\text{ min}}$
4) $\frac{75\text{ km}}{1\text{ hr}} \times \frac{1{,}000\text{ m}}{1\text{ km}} \times \frac{60\text{ min}}{1\text{ hr}}$

3 A construction worker needs to move 120 ft^3 of dirt by using a wheelbarrow. One wheelbarrow load holds 8 ft^3 of dirt and each load takes him 10 minutes to complete. One correct way to figure out the number of hours he would need to complete this job is

1) $\frac{120\text{ ft}^3}{1} \bullet \frac{10\text{ min}}{1\text{ load}} \bullet \frac{60\text{ min}}{1\text{ hr}} \bullet \frac{1\text{ load}}{8\text{ ft}^3}$
2) $\frac{120\text{ ft}^3}{1} \bullet \frac{60\text{ min}}{1\text{ hr}} \bullet \frac{8\text{ ft}^3}{10\text{ min}} \bullet \frac{1}{1\text{ load}}$
3) $\frac{120\text{ ft}^3}{1} \bullet \frac{1\text{ load}}{10\text{ min}} \bullet \frac{8\text{ ft}^3}{1\text{ load}} \bullet \frac{1\text{ hr}}{60\text{ min}}$
4) $\frac{120\text{ ft}^3}{1} \bullet \frac{1\text{ load}}{8\text{ ft}^3} \bullet \frac{10\text{ min}}{1\text{ load}} \bullet \frac{1\text{ hr}}{60\text{ min}}$

4 Dan took 12.5 seconds to run the 100-meter dash. He calculated the time to be approximately

1) 0.2083 minute
2) 750 minutes
3) 0.2083 hour
4) 0.52083 hour

5 If the speed of sound is 344 meters per second, what is the approximate speed of sound, in meters per hour?

60 seconds = 1 minute 60 minutes = 1 hour

1) 20,640
2) 41,280
3) 123,840
4) 1,238,400

Name: _____

6 Elizabeth is baking chocolate chip cookies. A single batch uses $\frac{3}{4}$ teaspoon of vanilla. If Elizabeth is mixing the ingredients for five batches at the same time, how many tablespoons of vanilla will she use?

3 teaspoons = 1 tablespoon

1) $1\frac{1}{4}$
2) $1\frac{3}{4}$
3) $3\frac{3}{4}$
4) $5\frac{3}{4}$

7 Peter walked 8,900 feet from home to school.

1 mile = 5,280 feet

How far, to the *nearest tenth of a mile*, did he walk?

1) 0.5
2) 0.6
3) 1.6
4) 1.7

8 A soda container holds $5\frac{1}{2}$ gallons of soda. How many ounces of soda does this container hold?

1 quart = 32 ounces 1 gallon = 4 quarts

1) 44
2) 176
3) 640
4) 704

9 A parking lot is 100 yards long. What is the length of $\frac{3}{4}$ of the parking lot, in feet?

1 yard = 3 feet

1) 300
2) 225
3) 75
4) 25

10 Last year, Nick rode his bicycle a total of 8000 miles. To the *nearest yard*, Nick rode an average of how many yards per day?

1 mile = 1760 yards 1 year = 365 days

1) 22
2) 236
3) 1659
4) 38,575

11 A total of 1680 ounces of pet food have to be packed in 5-pound bags. How many 5-pound bags of pet food can be packed?

1 pound = 16 ounces

1) 21
2) 28
3) 105
4) 336

Name: _____

12 Liem is 6 feet 2 inches, Eli is 5 feet 9 inches, Faith is 6 feet, and Simon is 5 feet 4 inches. In *yards*, what is the total of their heights?

1) $7\frac{3}{4}$
2) $7\frac{16}{36}$
3) $22\frac{15}{36}$
4) $23\frac{1}{4}$

13 Andy is 6 feet tall. If 1 inch equals 2.54 centimeters, how tall is Andy, to the *nearest centimeter?*

1) 15
2) 30
3) 183
4) 213

14 Angela wants to purchase carpeting for her living room. The dimensions of her living room are 12 feet by 12 feet. If carpeting is sold by the square yard, determine how many square yards of carpeting she must purchase.

3 feet = 1 yard
9 square feet = 1 square yard

15 Mrs. Chen owns two pieces of property. The areas of the properties are 77,120 square feet and 33,500 square feet.

43,560 square feet = 1 acre

Find the total number of acres Mrs. Chen owns, to the *nearest hundredth of an acre*.

16 A jogger ran at a rate of 5.4 miles per hour. Find the jogger's *exact* rate, in feet per minute.

1 mile = 5,280 feet

17 A typical marathon is 26.2 miles. Allan averages 12 kilometers per hour when running in marathons. Determine how long it would take Allan to complete a marathon, to the *nearest tenth of an hour*. Justify your answer.

18 Roberta needs ribbon for a craft project. The ribbon sells for $3.75 per yard. Find the cost, in dollars, for 48 inches of the ribbon.

19 If a United States dollar is worth $1.41 in Canadian money, how much is $100 in Canadian money worth in United States money, to the *nearest cent*?

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Answer Section

1 ANS: 2 REF: 011502ai
2 ANS: 3 REF: 011317ia
3 ANS: 4 REF: 061720ai
4 ANS: 1

$$12.5 \text{ sec} \times \frac{1 \text{ min}}{60 \text{ sec}} = 0.208\overline{3} \text{ min}$$

REF: 061608ai
5 ANS: 4

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

REF: 060911ia
6 ANS: 1

$$\frac{3}{4} \times 5 = \frac{15}{4} \text{ teaspoons} \times \frac{1 \text{ tablespoon}}{3 \text{ teaspoons}} = \frac{5}{4} = 1\frac{1}{4} \text{ tablespoon}$$

REF: 061228ia
7 ANS: 4

$$8900 \text{ ft} \times \frac{1 \text{ mi}}{5280 \text{ ft}} \approx 1.7 \text{ mi}$$

REF: 081210ia
8 ANS: 4

$$5.5 \text{ g} \times \frac{4 \text{ q}}{1 \text{ g}} \times \frac{32 \text{ oz}}{1 \text{ q}} = 704 \text{ oz}$$

REF: 061305ia
9 ANS: 2

$$100 \text{ yd} \cdot \frac{3 \text{ ft}}{1 \text{ yd}} \cdot \frac{3}{4} = 225$$

REF: 081415ia
10 ANS: 4

$$\frac{8000 \text{ mi}}{1 \text{ yr}} \times \frac{1760 \text{ yd}}{1 \text{ mi}} \times \frac{1 \text{ yr}}{365 \text{ d}} \approx 38{,}575 \text{ yd/d}$$

REF: 011522ia
11 ANS: 1

$$5 \times 16 = 80 \text{ oz.} \quad \frac{1680}{80} = 21$$

REF: 061521ia

12 ANS: 1

$$\frac{6(12)+2+5(12)+9+6(12)+5(12)+4}{36}=\frac{279}{36}=7.75$$

REF: 061629ia

13 ANS: 3

$$6 \text{ feet} \times \frac{12 \text{ inches}}{1 \text{ foot}} = 72 \text{ inches.} \quad 72 \text{ inches} \times \frac{2.54 \text{ cm}}{1 \text{ inch}} \approx 183 \text{ cm}$$

REF: 060709a

14 ANS:

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

REF: 011031ia

15 ANS:

$$77120 + 33500 = 110620 \text{ sq. ft.} \times \frac{1 \text{ acre}}{43560 \text{ sq. ft.}} \approx 2.54 \text{ acres}$$

REF: 081133ia

16 ANS:

$$\frac{5.4 \text{ miles}}{\text{hour}} \times \frac{5280 \text{ feet}}{\text{mile}} \times \frac{1 \text{ hour}}{60 \text{ min}} = \frac{475.2 \text{ ft}}{\text{min}}$$

REF: 081331ia

17 ANS:

$$12 \text{ km}\left(\frac{0.62 \text{ m}}{1 \text{ km}}\right) = 7.44 \text{ m} \quad \frac{26.2 \text{ m}}{7.44 \text{ mph}} \approx 3.5 \text{ hours}$$

REF: 011726ai

18 ANS:

5. $48 \text{ inches} \times \frac{1 \text{ yard}}{36 \text{ inches}} = \frac{4}{3} \text{ yards} \times \$3.75 = \$5.00$

REF: 011131ia

19 ANS:

70.92. $C\$100 \times \frac{\$1}{C\$1.41} \approx \$70.92$

REF: 060731a