

N.Q.A.1: Using Rate 1a

- 1 Patricia is trying to compare the average rainfall of New York to that of Arizona. A comparison between these two states for the months of July through September would be best measured in
 - 1) feet per hour
 - 2) inches per hour
 - 3) inches per month
 - 4) feet per month

- 2 The owner of a landscaping business wants to know how much time, on average, his workers spend mowing one lawn. Which is the most appropriate rate with which to calculate an answer to his question?
 - 1) lawns per employee
 - 2) lawns per day
 - 3) employee per lawns
 - 4) hours per lawn

- 3 A student spent 15 minutes painting a 2-foot by 3-foot bulletin board. To the *nearest tenth of a minute*, how long did it take the student to paint 1 square foot?
 - 1) 0.4
 - 2) 1.5
 - 3) 2.5
 - 4) 3.5

- 4 A cell phone can receive 120 messages per minute. At this rate, how many messages can the phone receive in 150 seconds?
 - 1) 48
 - 2) 75
 - 3) 300
 - 4) 18,000

- 5 Nicole's aerobics class exercises to fast-paced music. If the rate of the music is 120 beats per minute, how many beats would there be in a class that is 0.75 hour long?
 - 1) 90
 - 2) 160
 - 3) 5,400
 - 4) 7,200

- 6 A car uses one gallon of gasoline for every 20 miles it travels. If a gallon of gasoline costs \$3.98, how much will the gas cost, to the *nearest dollar*, to travel 180 miles?
 - 1) 9
 - 2) 36
 - 3) 45
 - 4) 80

- 7 Tom drove 290 miles from his college to home and used 23.2 gallons of gasoline. His sister, Ann, drove 225 miles from her college to home and used 15 gallons of gasoline. Whose vehicle had better gas mileage? Justify your answer.

- 8 Joseph typed a 1,200-word essay in 25 minutes. At this rate, determine how many words he can type in 45 minutes.

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Answer Section

1 ANS: 3 REF: 081609ai

2 ANS: 4 REF: 081909ai

3 ANS: 3

$$\frac{15}{2 \times 3} = 2.5$$

REF: 011509ia

4 ANS: 3

$$\frac{120}{60} = \frac{m}{150}$$

$$m = 300$$

REF: 081202ia

5 ANS: 3

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

$$x = 5400$$

REF: 080814ia

6 ANS: 2

$$\frac{20}{3.98} = \frac{180}{x}$$

$$20x = 716.4$$

$$x = 35.82 \approx 36$$

REF: 011302ia

7 ANS:

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

REF: 060831ia

8 ANS:

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

$$25x = 54,000$$

$$x = 2,160$$

REF: 081032ia