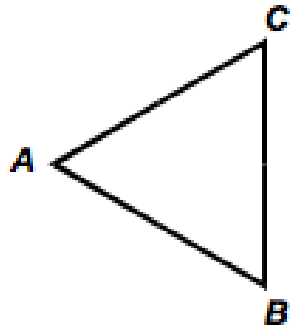


MTH-2010, FALL 2014
DR. GRAHAM-SQUIRE

MTEL PRACTICE - 7 QUESTION QUIZ

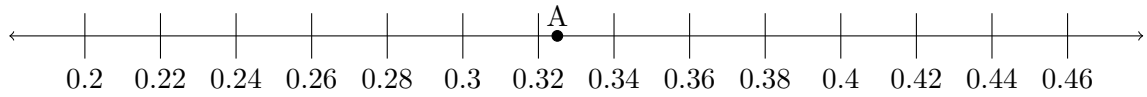
(1) Use the figure below to answer the question that follows.



If equilateral triangle ABC above represents one of two congruent halves of a figure that has AB as a line of symmetry, then the entire figure is a:

- (A) rhombus.
- (B) square.
- (C) rectangle.
- (D) triangle.

(2) Below is a portion of a number line.



Point A is one-quarter of the distance from 0.32 to 0.34. What number is represented by point A?

- (A) 0.33
- (B) 0.325
- (C) 0.3225
- (D) 0.32

(3) Use the table below to answer the question that follows.

4	20	28	36	44	52
3	15	23	31	39	47
2	10	18	26	34	42
1	5	13	21	29	37
0	0	8	16	24	32
	0	1	2	3	4

x

Each number in the table above represents a value of w that is determined by the values of integers x and y . For example, when $x = 2$ and $y = 1$, $w = 21$. If the pattern continues, what is the value of w when $x = 20$ and $y = 8$?

- (A) 164
- (B) 200
- (C) 208
- (D) 820

(4) Here is a student's work on several multiplication problems:

$$\begin{array}{r} \mathbf{1\ 2} \\ \mathbf{\times\ 3\ 8} \\ \hline \mathbf{8\ 1\ 6} \\ \mathbf{3\ 6\ 0} \\ \hline \mathbf{1\ 1\ 7\ 6} \end{array}$$

$$\begin{array}{r} \mathbf{7\ 6} \\ \mathbf{\times\ 8} \\ \hline \mathbf{5\ 6\ 4\ 8} \end{array}$$

$$\begin{array}{r} \mathbf{4\ 1} \\ \mathbf{\times\ 2\ 2} \\ \hline \mathbf{8\ 2} \\ \mathbf{8\ 2\ 0} \\ \hline \mathbf{9\ 0\ 2} \end{array}$$

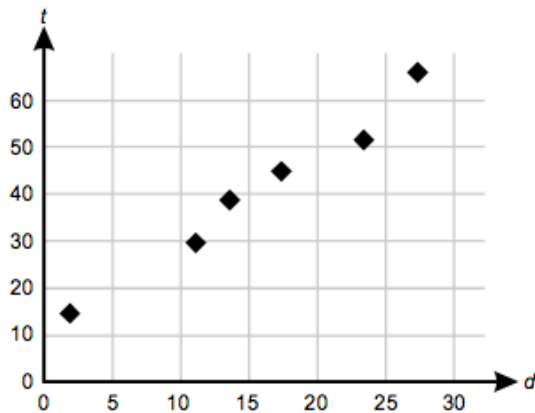
For which of the following problems is this student most likely to get the correct solution, even though he is using an incorrect algorithm?

- (A) 235×17
- (B) 64×46
- (C) 9×13
- (D) 24×12
- (5) A pretzel company sells pretzels in a cylindrical container with a radius of 10 cm and a height of 30 cm. The company's packaging designers are considering switching to a new cylindrical container with a radius of 20 cm and a height of 15 cm. How does the volume of the proposed new container compare to the volume of the old container?
- (A) The volume of the new container is 125 cm^3 less than the volume of the old container.
- (B) The volume of the new container is 5 cm^3 less than the volume of the old container.
- (C) The volume of the new container is equal to the volume of the old container.
- (D) The volume of the new container is twice the volume of the old container.

- (6) In January 2014, the national debt was about 17 trillion dollars and the US population was about 300 million people. Someone reading these figures estimated that the national debt was about \$6,000 per person. Which of these statements best describes the reasonableness of this estimate? Show your work!

- (A) It is too low by a factor of 10
- (B) It is too low by a factor of 100
- (C) It is too high by a factor of 10
- (D) It is too high by a factor of 100

- (7) Use the graph below to answer the question that follows.



The graph above shows the distance d in miles and the time t in minutes for six bus routes around a city. Which of the following equations best models the relationship between d and t for these bus routes?

- (A) $t = d$
- (B) $t = d + 10$
- (C) $t = 2d$
- (D) $t = 2d + 10$