



# ACT MATHEMATICS DIAGNOSTIC TEST

60 Minutes—60 Questions


1.  $|2 - 8| - |2 + 8| = ?$  

**DO FIGURING HERE**

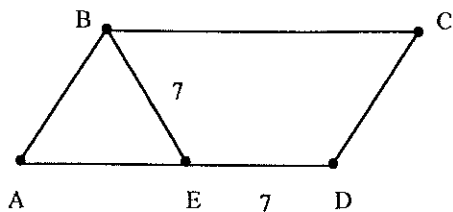
- A. -16
- B. -4
- C. 0
- D. 4
- E. 16

2. Kevin drove 95 miles to meet his friend Amanda at an amusement park. Amanda drove 125 miles to get to the same amusement park. Given that Kevin's truck uses one gallon of gasoline every 15 miles and Amanda's hybrid car uses one gallon of gasoline every 40 miles, approximately how many more gallons of gasoline did Kevin's truck use than Amanda's car to reach the amusement park? 


- F. 3
- G. 4
- H. 6
- J. 7
- K. 8

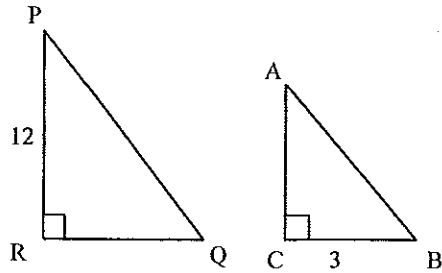
3. The figure below depicts parallelogram ABCD with equilateral triangle ABE.  $\overline{BE} = \overline{DE} = 7$  as shown. What is the perimeter of the parallelogram? 




- A. 21
- B. 28
- C. 35
- D. 42
- E. 49



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4. In the figure below,  $\triangle PQR$  is similar to  $\triangle ABC$ . If the area of  $\triangle ABC$  is 6, what is the area of  $\triangle PQR$ ?  DO YOUR FIGURING HERE.



- F. 18  
G. 36  
H. 54  
J. 96  
K. 108
5. If 60% of a given number is 18.0, what is 25% of the given number? 
- A. 2.7  
B. 4.5  
C. 7.5  
D. 12.0  
E. 13.5
- 
6. A woman has three different hats, two different jackets, and six different blouses. If an outfit consists of one hat, one jacket, and one blouse, how many different outfits can the woman choose? 
- F. 2  
G. 3  
H. 11  
J. 36  
K. 49
7. Which of the following is the slope of a line perpendicular to the line defined by  $y - 2 = 3x$ ? 
- A.  $-3$   
B.  $-\frac{1}{3}$   
C.  $\frac{1}{3}$   
D. 2  
E. 3

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