



ثانوية التكنولوجيا التطبيقية  
Applied Technology High School

**SAT I****2012 / 2013**

## Question booklet # 10

<b>Grade</b>	<b>12</b>
<b>Cluster</b>	<b>Core</b>
<b>Subject</b>	<b>Mathematics</b>

<b>Student Name</b>			
<b>Student Number</b>		<b>Section</b>	

<b>Coverage</b>	<p>➤ SAT I, basic reasoning questions.</p>
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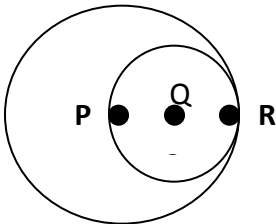
1. Each of the following is a factor of 80 EXCEPT

- A) 5
- B) 8
- C) 12
- D) 16
- E) 40

2. If  $k$  is divisible by 2, 3 and 15, which of the following is also divisible by these numbers?

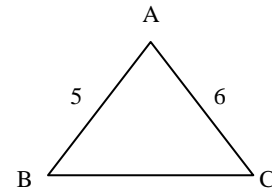
- A)  $k+5$
- B)  $k+15$
- C)  $k+20$
- D)  $k+30$
- E)  $k+45$

3.



In the figure above, P, Q, and R lie on the same line. P is the center of the larger circle, and Q is the center of the smaller circle. If the radius of the larger circle is 4, what is the radius of the smaller circle?

- A) 1
- B) 2
- C) 4
- D) 8
- E) 16



4. If two sides of the triangle above have lengths 5 and 6 the perimeter of the triangle could be which of the following?

- I. 11
  - II. 15
  - III. 24
- A) I only
  - B) II only
  - C) III only
  - D) II and III only
  - E) I, II, and III

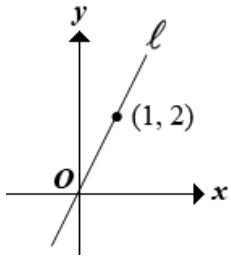
5.

<i>Noontime Temperatures in Hilo, Hawaii</i>						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
66	78	75	69	78	77	70

The table above shows the temperatures, in degrees Fahrenheit, in a city in Hawaii over a one-week period. If  $m$  represents the median temperature,  $f$  represents the temperature that occurs most often, and  $a$  represents the average (arithmetic mean) of the seven temperatures, which of the following is the correct order of  $m, f$  and  $a$ ?

- A)  $a < m < f$
- B)  $a < f < m$
- C)  $m < a < f$
- D)  $m < f < a$
- E)  $a = m < f$

6.



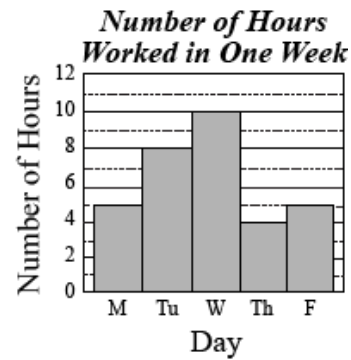
In the  $xy$ -coordinate plane above, line  $\ell$  contains the points  $(0, 0)$  and  $(1, 2)$ . If line  $m$  (not shown) contains the point  $(0, 0)$  and is perpendicular to  $\ell$ , what is an equation of  $m$ ?

- A)  $y = -\frac{1}{2}x$   
 B)  $y = -\frac{1}{2}x + 1$   
 C)  $y = -x$   
 D)  $y = -x + 2$   
 E)  $y = -2x$

7. In a survey at a university over 50 men and 40 women, 70% of the men and 25% of the women said yes they preferred Political books. What percent of the number of people who said yes?

- A) 40%  
 B) 45%  
 C) 50%  
 D) 65%  
 E) 75%

8.



The graph above shows the number of hours that Bill worked each day during one week. What was the total number of hours that he worked during the week?

- A) 31  
 B) 32  
 C) 33  
 D) 34  
 E) 36

9. Which of the following must be equal to  $yx + xz - yz$ , for all values of  $x$ ,  $y$ , and  $z$ ?

- I.  $xy - z(x - y)$   
 II.  $x(y + z) - yz$   
 III.  $(x + y)(x - z)$

- A) I only  
 B) II only  
 C) III only  
 D) I and II only  
 E) II and III only

10. If  $f(x) = x^2 - 1$ , and  $f(2a) = 35$ , then what could be the value of  $a$ ?
- A) -2  
 B) -1  
 C) 1  
 D) 3  
 E) 6
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11. What is necessarily the value of  $|x - 10|$  if  $x$  is less than 10?
- A)  $10-x$   
 B)  $x-10$   
 C)  $x$   
 D) 10  
 E)  $x+10$
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12. If 300\$ are divided among 85 students so that each boy gets 4\$ and each girl gets 3\$, then find the number of boys and girls.
- A) 40, 45  
 B) 30, 55  
 C) 45, 40  
 D) 55, 30  
 E) 60, 25

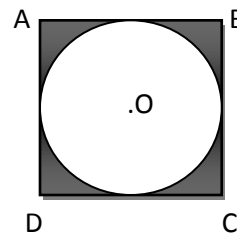
13. Set  $J$  is the set of all positive even integers and set  $K$  is the set of all numbers between -2 and 2, inclusive. Which of the following represents the intersection of  $J$  and  $K$ ?

- A) all integers  
 B) all positive integers  
 C) all positive even integers  
 D)  $\{2\}$   
 E)  $\{0,2\}$
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14. If  $gh > 0$ , Which of the following must be true?

- A)  $\frac{g}{h} > 0$   
 B)  $\frac{h}{g} < 0$   
 C)  $g + h > 0$   
 D)  $g - h > 0$   
 E)  $g + h < 0$
- 

- 15.



In the figure above, a circle O of radius 4 is inscribed in square ABCD. What is the area of the shaded region?

- A)  $16-4\pi$   
 B)  $32-4\pi$   
 C)  $32-8\pi$   
 D)  $64-8\pi$   
 E)  $64-16\pi$