ثانويـة التكنولوجيـا التطبيقيـة
Applied Technology High School

SAT I 2012 / 2013

Question booklet # 2

Grade	**11**
Cluster	**Core**
Subject	**Mathematics**

Student Name			
Student Number		**Section**	

Coverage	➢ SAT I, basic reasoning questions.

1. Two of three angles of a triangle are equal. What is the measure of each one, in degrees, if the measure of the third angle is $70°$?

   a. $65°$
   b. $55°$
   c. $45°$
   d. $70°$
   e. $140°$

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2. 15 less than a number x is equal to the difference of double 5 and 3, What is the value of x ?

   a. 16
   b. 18
   c. 20
   d. 22
   e. 24

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3. If a and b are odd integers. Which of the following must be also **Odd** integer?

   I. $2a - b$
   II. $4a - 2b$
   III. $4ab$

   a. None
   b. I only
   c. II only
   d. III only
   e. I and II

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a	$f(a)$	$g(a)$
1	3	-2
2	6	1
3	5	4
4	-1	5
-1	0	7

4. Let the functions f, and g be defined by the table above. If $g(f(a)) = 7$, what is the value of a?

   a. -1
   b. 1
   c. 4
   d. 5
   e. 7

5. If $x < -4$ and $y = +6$, which of the following must be true?

   a. $x + y < 1$
   b. $x - y > -1$
   c. $x - y > +1$
   d. $x - y > +4$
   e. $x + y < -3$

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6. Mike charges a $\$100$ fee, plus $\$20$ per can of paint needed to complete the job. Which of the following expressions represents the painter charge, in dollars, after using y cans?

   a. $100\,y$
   b. $100 + 20\,y$
   c. $20 + 100y$
   d. $(100 + 20)y$
   e. $102\,y$

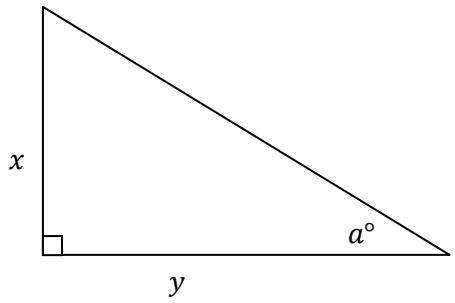

Figure not drawn to scale

7. For which of the following values of a will a right triangle with sides and angles as labeled above result in the largest value of $\frac{x}{y}$?

   a. 15
   b. 30
   c. 45
   d. 60
   e. 75

8. For which of the following values of x is 25^x equal to 5?

   a. 2
   b. 1
   c. $\frac{1}{2}$
   d. $\frac{3}{2}$
   e. $\frac{2}{3}$

$$2x + 4y = 2$$
$$x - 2y = 7$$

9. In the solution to the system of equations above, what is the value of x?

   a. 3
   b. 4
   c. 5
   d. 6
   e. 7

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10. What is the greatest number of pieces of rope, each $\frac{2}{7}$ meter long, that can be cut from a piece of rope that is 8 meters long?

    a. 20
    b. 24
    c. 28
    d. 32
    e. 36

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11. For all numbers s and t, let the operation $\diamondsuit$ be define by $s \diamondsuit t = s$ and let operation $\bigcirc$ be defined by $s \bigcirc t = 2t$. Which of the following must be true?

    a. $s \bigcirc t = t \bigcirc s$
    b. $s \diamondsuit t = t \diamondsuit s$
    c. $s \bigcirc t = 2(s \diamondsuit t)$
    d. $s \bigcirc t = 2(t \diamondsuit s)$
    e. $t \diamondsuit (s \bigcirc t) = s \bigcirc (t \diamondsuit s)$

12. 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

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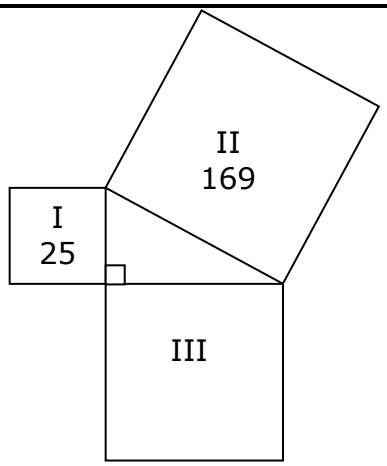
13. The ratio of the width of a rectangle to its length is 1 to 3. If the perimeter of the rectangle is 40, what is the width of the rectangle?

    a. 2
    b. 3
    c. 4
    d. 5
    e. 6



14. In the figure above, if square I has an area of 25 square units and square II has an area of 169 square units, how many square units is the area of square III?

    a. 81
    b. 100
    c. 121
    d. 144
    e. 196

End of Practice sheet Two