Applied Technology High School

SAT I	2012 / 2013

Question booklet 11

Grade	12
Cluster	Core
Subject	Mathematics

Student Name	
Student Number		Section	

Coverage	➢ SAT I, basic reasoning questions.

1. If $3x - y = 5$ and $x = 4 - 2y$ .What is the value of $2y$?
   a. 2
   b. 0
   c. 4
   d. 6
   e. 8

2. If $xy = 5$, $xz = 10$, $yz = 2$ and $x, y, and z$ are positive, what is the value of xyz?
   a. 5
   b. 10
   c. 20
   d. 25
   e. 50

3. If $3(x + y) = \frac{1}{4}$ What is the value of $\frac{x+y}{2}$?

   a. $\frac{1}{10}$
   b. $\frac{1}{20}$
   c. $\frac{1}{12}$
   d. $\frac{1}{24}$
   e. $\frac{2}{5}$

4.
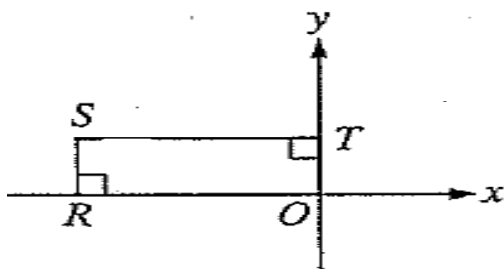
   In the xy-plane above, the length of $\overline{ST}$ is three times the length of $\overline{RS}$. If the coordinates of S are (-6,k), what is the value of k?
   a. -2
   b. -1
   c. 2
   d. -3
   e. 1

5. If the average of 4, 10, a and b is 9, what is the sum of a and b.
   a. 4
   b. 9
   c. 13
   d. 22
   e. 36

6. For all nonnegative numbers , let $f(x)$ be defined by $f(x) = \frac{\sqrt{x}}{2}$ If $f(b) = 4$ what is the value of b ?

   a. 6
   b. 2
   c. 36
   d. 64
   e. 81

7. A circle has an area of π square centimeters. What is the circumference of the circle?
   a. $\sqrt{\pi}$
   b. π
   c. 2π
   d. 3π
   e. π^2

8. If $m = -3a$, what is $-4m + 3$ in terms of
    a?

        a. $-12a - 3$

        b. $-7a + 3$

        c. $7a + 3$

        d. $12a - 3$

        e. $12a + 3$
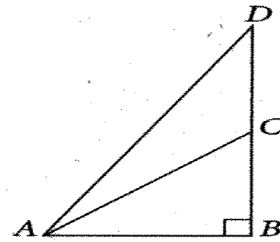
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9. Let $s \bullet t = rs + 3s$ for all integers r and s. If
    $s \bullet t = 0$ and $s \neq 0$, what must r equal?

    a. -3

    b. -1

    c. 0

    d. 1

    e. 2

$$y = \frac{2x + 1}{x - 1}$$

10. Which of the following points in the xy-
    plane is NOT on the graph of the equation
    above?

a. $(2 , 5)$

b. $(-1, \frac{1}{2})$

c. $(0, -1)$

d. $(-2 , -1)$

e. $(3 , \frac{7}{2})$

11. In the figure above, the area of
    triangle ABC is 6. If BC = CD, What
    is the area of triangle ACD ?

    a. 6

    b. 8

    c. 9

    d. 10

    e. 12

12. If $g(x) = 3x^2 + ax + 2$ and $g(1) = 8$, what is the
    value of $g(2)$

    a. 10

    b. 20

    c. 30

    d. 17

    e. 22

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13. If x < -5 and y + 5 = 2x, which of the following
    must be true?

    a. x + 3 > 0

    b. y + 10 > 0

    c. x + y > 0

    d. x < y

    e. y + 15 < 0

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14. Ahmad has books, pens, and pencils . The
    number of books he has is 3 more than the
    number of pens, and the number of pens is
    2 times the number of pencils. Of the
    following, if the total number of these
    items is 23, find the number of pencils?

    a. 5

    b. 6

    c. 4

    d. 3

    e. 7

End of Practice sheet 11