Applied Technology High School

SAT I   2012 / 2013

Question booklet # 3

Grade	11
Cluster	Core
Subject	Mathematics

Student Name	
Student Number	Section

Coverage	➤ SAT I, basic reasoning questions.

1. The average (arithmetic mean) of three numbers is 5. If one of the numbers is 4, what is the sum of the other two numbers?

    a. 8
    b. 9
    c. 10
    d. 11
    e. 12

2. If x is 4 less than p and p is 2 more than m, then what is the value of x when m = 2?
    a. -1
    b. 0
    c. 1
    d. 2
    e. 4

3. If $\frac{5}{8}$ of a number is 20, what is $\frac{1}{8}$ of the number?
    a. $\frac{1}{2}$
    b. 4
    c. 8
    d. 16
    e. 32

4. All of Mark's former students go to college.
   If the statement above is true, which of the following must also be true?
        a. If Ethan was not Mark's student, then he is not going to college.
        b. If Joyelle goes to college, then she was not Mark's student.
        c. If Ginger goes to college, then she was Mark's student.
        d. If Stephanie was Mark's student, then she is not going to college.
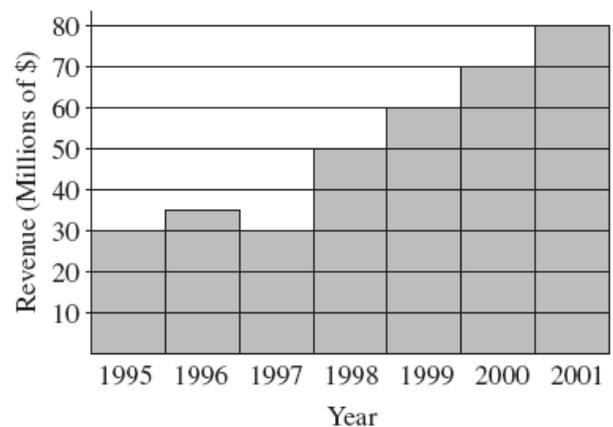   e. If Steve does not go to college, then he was not Mark's student.

5. If 30 percent of n is 72, what is 15 percent of 2n?
    a. 18
    b. 36
    c. 64
    d. 72
    e. 144

6. If $a^2 - b^2 = 12$, and $a - b = 4$, then what is the value of ab ?
        a. $-1\frac{3}{4}$
        b. $-\frac{1}{2}$
        c. 0
        d. $3\frac{1}{2}$
        e. $4\frac{1}{4}$

SALES REVENUE FOR BARTSWELL CORPORATION

7. The bar graph above shows the annual sales revenue for the Bartswell Corporation for the years 1995 through 2001. For which of the following years was the percent increase in revenue from the previous year the same as it was in 1996?
        a. 1997
        b. 1998
        c. 1999
        d. 2000
        e. 2001

8. "All multiples of 3 are odd."
   Which of the following numbers
   provides a counterexample to the
   statement above?
   a. 9
   b. 12
   c. 13
   d. 14
   e. 15

$$5x + 9y = 14$$
$$15x - ky = 38$$

9. For which of the following values of k will
   there be <u>no</u> solutions to the system of
   equations given above?

   a. −27

   b. −18

   c. 0

   d. 18

   e. 27

10. If $x > x^2$, which of the following must
    be true?
    I. $x < 1$
    II. $x > 0$
    III. $x^2 > 1$

    a. I only

    b. II only

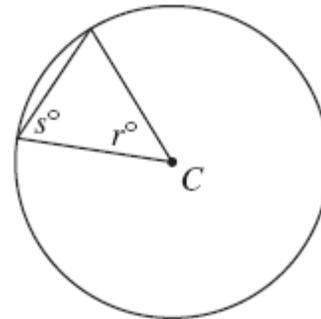   c. I and II only

    d. I and III only

    e. I, II and III

11. For all numbers x and y, let x♣y be
    defined as x♣y $= x^2 - 2xy + y^2$. What is
    the value of (2♣4)♣8?
    a. 1
    b. 4
    c. 12
    d. 16
    e. 20

12. If $\frac{x+2y}{y} = 5$, what is the value of $\frac{y}{x}$?
    a. −3
    b. $-\frac{1}{3}$
    c. $\frac{1}{3}$
    d. 3
    e. 4

13. If $f(x) = e^x$ and $g(x) = \frac{x}{2}$, $g(f(2)) = ?$
    a. 2.7
    b. 3.7
    c. 4.2
    d. 5.4
    e. 6.1

14. In the figure above if C is the center
    of the circle and $20 < r < 40$, which of
    the following expresses all possible
    values of s?
    a. $30 < s < 50$
    b. $50 < s < 70$
    c. $70 < s < 80$
    d. $75 < s < 90$
    e. $140 < s < 160$

    **End of Practice sheet
    three**