Applied Technology High School

SAT I   2012 / 2013

Question booklet # 4

Grade	12
Cluster	Core
Subject	Mathematics

Student Name	
Student Number		Section	

Coverage	➢ SAT I, basic reasoning questions.
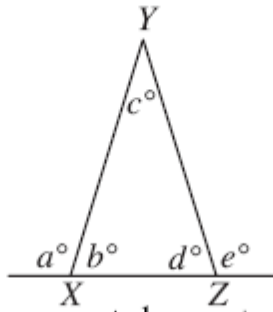
Note: Figure not drawn to scale.

1. In $\triangle XYZ$ above $XY = YZ$ which of the following must be true?

   a. $a = c$
   b. $a = e$
   c. $a = d$
   d. $b = e$
   e. $c = d$

2. If $\frac{1}{x^{-2}} = 16$, which of the following could be the value of x ?

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

3. There are 5 CD racks in a room. Each rack contains at least 10 CDs but not more than 14 CDs. Which of the following could be the total number of CDs on all five racks?

   a. 25
   b. 35
   c. 55
   d. 75
   e. 85

MONTHLY EARNINGS FOR EMMA AND SARAH
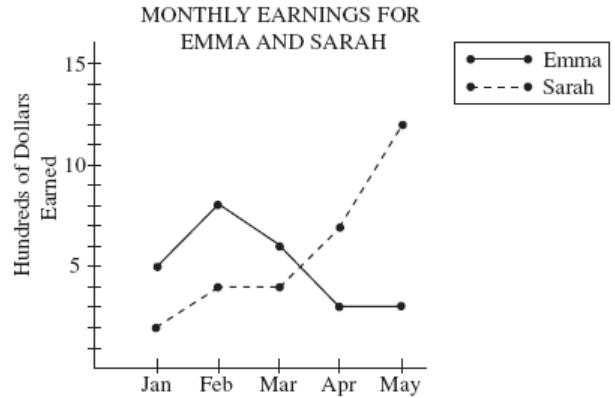
4. According to the graph above, for which month did Sarah earn $400 more than Emma?

   a. January
   b. February
   c. March
   d. April
   e. May

5. The price of admission to the New Haven Children's Museum is $6 more for adults than for children. If a group of 6 adults and 18 children pays a total of $108 to visit the museum, what is the cost, in dollars, of the ticket for one adult?

   a. $7.00
   b. $9.00
   c. $10.00
   d. $12.00
   e. $13.00

6. If the average of 8 and x is 10 and the average of 7 and y is 11, what is the average of x and y?

   a. 9.0
   b. 10.5
   c. 12.0
   d. 13.5
   e. 15.0

7. If the area of the triangle is 36 and its base is 9, what is the length of the altitude to that base?

   a. 2

   b. 4

   c. 6

   d. 8

   e. 12

$$3x + 4y = -2$$
$$x - 2y = 11$$

8. In the solution to the system of equations above, what is the value of $2x$?

   a. 4

   b. 5

   c. 6

   d. 7

   e. 8

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9. Let $a\blacksquare$ be defined for all positive integers as $a\blacksquare = \frac{a}{4} - \frac{a}{6}$ if $x\blacksquare = 3$ what is the value of x ?

   a. 18

   b. 28

   c. 36

   d. 40

   e. 54

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10. The price s of a sweater is reduced by 25% for a sale. After the sale, the reduced price is increased by 20% which of the following represent the final price of the sweater?

    a. $0.80s$

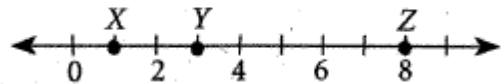   b. $0.85s$

    c. $0.90s$

    d. $0.95s$

    e. $1.05s$

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11. If $f(x) = x^2$ for all real values of x, which of the following is not a possible value of $f(x)$?

    I. -4
    II. 0
    III. 2.3

    a. I only
    b. II only
    c. III only
    d. I and II only
    e. II and III only

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12. If q is 4 less than r and r is 6 more than s what is the value of q when $s = 2$?

    a. -8

    b. -4

    c. -2

    d. 4

    e. 8

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13. On the number line shown above, the length of YZ is how much greater than the length of YX ?

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

End of Practice sheet Four