



ثانوية التكنولوجيا التطبيقية
Applied Technology High School

SAT I**2012 / 2013**

Question booklet # 7

Grade	12
Cluster	Core
Subject	Mathematics

Student Name			
Student Number		Section	

Coverage	<p>➤ SAT me, basic reasoning questions.</p>
-----------------	---

1. If $g(2) = 30$ and $g(-2) = -30$, then which of the following could be $g(x)$?

- a. $g(x) = x^3 + 22$
- b. $g(x) = 5x + 20$
- c. $g(x) = x^5 - x$
- d. $g(x) = -15x$
- e. $g(x) = 4x^2 + 16$

2. A student wrote 3 essays in his English class. He wants to put all of them in his portfolio and is deciding in what order to place the essays. In how many different orders can he arrange his essays?

- a. 6
- b. 30
- c. 720
- d. 860
- e. 169

3. A bag contains 6 blue marbles and 15 black marbles. If one marble is drawn at random, what is the probability that the marble is black?

- a. $\frac{5}{7}$
- b. $\frac{5}{2}$
- c. $\frac{1}{3}$
- d. $\frac{5}{7}$
- e. 15

4. Ziad has taken five math tests and has an average of 70. If he scores a 100 on his sixth math test, what is his average for these 6 tests?

- a. 72
- b. 74
- c. 75
- d. 76
- e. 77

5. If x percent of 20 is 20 percent of y , what is the value of x in terms of y ?

- a. $20\% \cdot y$
- b. $y\%$
- c. y
- d. $y + 20$
- e. $3y$
- f. $400y$

6. If $2\sqrt{x+5} - 4 = 10$, what is the value of x ?

- a. $\sqrt{2}$
- b. 5
- c. 6
- d. 7
- e. 44

7. Let $x \# y$ be defined by the equation:

$$x \# y = 2\frac{y}{x} - 1, \text{ what is the value of } \frac{3}{2} \# 6?$$

- a. 6
- b. 1
- c. 7
- d. $\frac{3}{2}$
- e. 8

8. A rectangle of width 6 has a diagonal of length 10. What is the perimeter of the rectangle ?

- a. 8
- b. $20\sqrt{2}$
- c. 32
- d. 48
- e. 28

9. For all x , let $f(x) = (10 - x)^2$. If $p = f(6)$, which of the following is equal to $4p$?

- a. $f(24)$
- b. $f(18)$
- c. $f(12)$
- d. $f(8)$
- e. $f(4)$

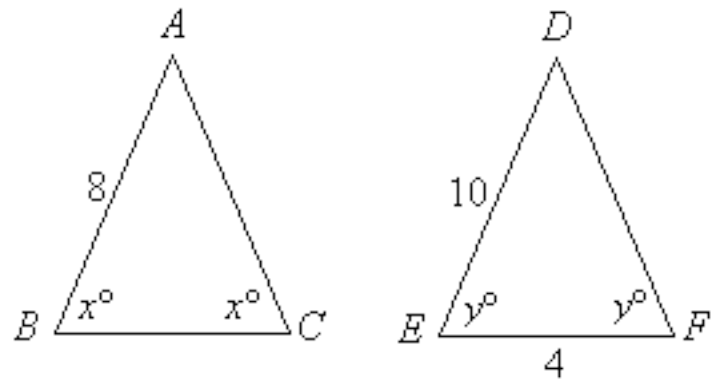
10. The amount of time it takes to consume water is inversely proportional to the number of people. If it takes 10 people 6 days to consume the water, how many fewer hours will it take if there are 2 more people?

- a. 12
- b. 24
- c. 36
- d. 36
- e. 81

11. If the median of 3, 7, 10 and x is 7, what is the value of x ?

- a. 5.5
- b. 6
- c. 6.5
- d. 7
- e. 8

12. In the given figure,



Note: Figures not drawn to scale

In the figures above, $x = 60$. How much more is the perimeter of triangle ABC compared with the triangle DEF .

- a. 1
- b. 2
- c. 3
- d. 0
- e. 4

13. The perimeter of an isosceles triangle is 24 inches. If the base measures 10 inches, what is the length of each of the other two sides?
- a. 3
 - b. 4
 - c. 5
 - d. 6
 - e. 7
-

14. If $a^2 - a = 6$ and $b^2 - b = 6$, what is the greatest possible value of $a - b$?

- a. 1
 - b. 2
 - c. 5
 - d. 164
 - e. 2
-

15. There are 600 students in a school. Of these 400 can speak French, 300 can speak German. How many can speak both the languages?
- a. 90
 - b. 100
 - c. 110
 - d. 115
 - e. 120
-