



Texas Success Initiative Sample Questions

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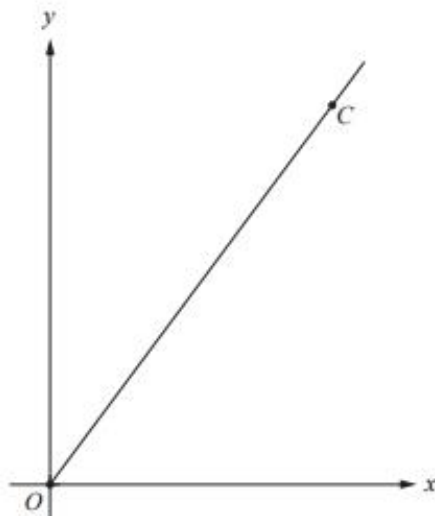
Mathematics Sample Questions

Directions for questions 1–15

For each of the questions below, choose the best answer from the four choices given. You may use the paper you received as scratch paper.

1. If $3t - 7 = 5t$, then $6t =$
 - A. 21
 - B. -7
 - C. -21
 - D. -42

2. The variables x and y are directly proportional, and $y = 2$ when $x = 3$. What is the value of y when $x = 9$?
 - A. 4
 - B. 6
 - C. 8
 - D. 12



3. In the xy -plane above, point C has coordinates $(6, 9)$. Which of the following is an equation of the line that contains points O and C ?
 - A. $y = x - 3$
 - B. $y = x + 3$
 - C. $y = \frac{2}{3}x$
 - D. $y = \frac{3}{2}x$

4. There are $3x - 2$ trees planted in each row of a rectangular parcel of land. If there are a total of $24x - 16$ trees planted in the parcel, how many rows of trees are there in the parcel?
- A. $21x - 18$
 - B. $21x - 14$
 - C. $8x$
 - D. 8
5. A group of 18 people ordered soup and sandwiches for lunch. Each person in the group had either one soup or one sandwich. The sandwiches cost \$7.75 each and the soups cost \$4.50 each. If the total cost of all 18 lunches was \$113.50, how many sandwiches were ordered?
- A. 7
 - B. 8
 - C. 9
 - D. 10
6. Which of the following equations has both 1 and -3 as solutions?
- A. $x^2 - 2x - 3 = 0$
 - B. $x^2 + 2x - 3 = 0$
 - C. $x^2 - 4x + 3 = 0$
 - D. $x^2 + 4x + 3 = 0$
7. In the xy -plane, what is the y -intercept of the graph of the equation $y = 2(x + 3)(x - 4)$?
- A. -24
 - B. -12
 - C. -2
 - D. 12
8. $x^4 - 1 =$
- A. $(x + 1)(x - 1)(x^2 + 1)$
 - B. $(x + 1)^2(x - 1)^2$
 - C. $(x + 1)^3(x - 1)^1$
 - D. $(x - 1)^4$

9. $(3x^2y^3)^3 =$

- A. $3x^5y^6$
- B. $9x^6y^9$
- C. $27x^5y^6$
- D. $27x^6y^9$

10. If $\sqrt{5-x} = 4$, then $x =$

- A. -21
- B. -11
- C. 1
- D. 11

11. If $\frac{x-1}{x} = 20$, then $x =$

- A. -21
- B. -19
- C. $-\frac{1}{19}$
- D. $\frac{1}{21}$

12. A ball was kicked into the air from a balcony 20 feet above the ground, and the ball's height above the ground, in feet, t seconds after the ball was kicked was $h(t) = 20 - 16t^2 + 32t$. What was the maximum height, in feet, of the ball above the ground after it was kicked?

- A. 32
- B. 34
- C. 36
- D. 40

13. The yard behind the Cindy's house is rectangular in shape and has a perimeter of 72 feet. If the length ℓ of the yard is 18 feet longer than the width w of the yard, what is the area of the yard, in square feet?

- A. 36
- B. 144
- C. 243
- D. 486

City	High Temperature
<i>A</i>	$t^{\circ}\text{F}$
<i>B</i>	87°F
<i>C</i>	81°F
<i>D</i>	62°F
<i>E</i>	93°F

14. The table above shows the high temperature last Thursday for five cities, *A* through *E*. If the median of the Thursday high temperatures for these cities was 81°F , which of the following could NOT have been the high temperature last Thursday for City *A* ?

- A. 85°F
- B. 75°F
- C. 65°F
- D. 55°F

15. There are 20 children in the cast of a class play, and 8 of the children are boys. Of the boys, 4 have a speaking part in the play, and of the girls, 8 do not have a speaking part in the play. If a child from the cast of the play is chosen at random, what is the probability that the child has a speaking part?

- A. $\frac{2}{5}$
- B. $\frac{1}{2}$
- C. $\frac{3}{5}$
- D. $\frac{3}{4}$