

The Texas Success Initiative (TSI) Mathematics and Statistics test contains questions that measure proficiency in the following four content areas:

Elementary Algebra and Functions

- Linear equations, inequalities and systems
- Algebraic expressions and equations
- Word problems and applications

Intermediate Algebra and Functions

- Quadratic and other polynomial expressions, equations and functions
- Expressions, equations and functions involving powers, roots and radicals
- Rational and exponential expressions, equations and functions

Geometry and Measurement

- Plane geometry
- Transformations and symmetry
- Linear, area and three-dimensional measurements

Data Analysis, Statistics and Probability

- Interpreting categorical and quantitative data
- Statistical measures
- Probabilistic reasoning

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.

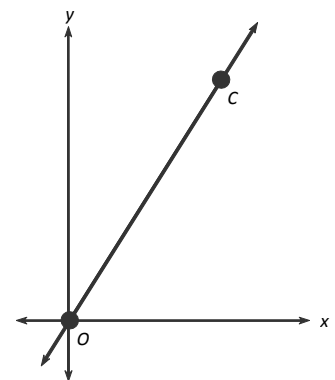
1. If $3t - 7 = 5t$, then $6t =$
 - A. 21
 - B. -7
 - C. -21
 - D. -42
2. The variables x and y are directly proportional, and $y = 2$ when $x = 3$. What is the value of y when $x = 9$?
 - A. 4
 - B. 6
 - C. 8
 - D. 12
3. In the xy -plane below point C has coordinates $(6, 9)$. Which of the following 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 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 Cindy's house is rectangular in shape and has a perimeter of 72 feet. If the length ℓ of the yard 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

14. The table below shows the high temperatures 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 ?

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

- 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. $\frac{3}{4}$

Answer Key

- 1. C
- 2. B
- 3. D
- 4. D
- 5. D
- 6. B
- 7. A
- 8. A
- 9. D
- 10. B
- 11. C
- 12. C
- 13. C
- 14. A
- 15. A