

8th Grade Math Quiz

Fifteen problems covering linear equations, the Pythagorean theorem, exponents, and functions. Ca...

Name / Team: _____

Score: _____

1 Solve: $3x - 7 = 14$

A. $x = 3$

B. $x = 7$

C. $x = 9$

D. $x = 21$

2 A right triangle has legs of 3 and 4. What is the length of the hypotenuse?

A. 5

B. 6

C. 7

D. 12

3 What is 2 to the power of 5 (2^5)?

A. 10

B. 25

C. 32

D. 64

4 What is the slope of a line that passes through points (1, 3) and (4, 9)?

A. 1

B. 2

C. 3

D. 6

5 Simplify: $3^2 \times 3^3$

A. 3^5

B. 3^6

C. 9^5

D. 3^8

6 Which equation represents a line with slope 3 and y-intercept -2?

A. $y = -2x + 3$

B. $y = 3x - 2$

C. $y = 3x + 2$

D. $y = -2x - 3$

7 What is the square root of 144?

A. 11

B. 12

C. 13

D. 14

8 Solve: $2(x + 3) = 16$

A. $x = 4$

B. $x = 5$

C. $x = 6.5$

D. $x = 8$

9 What is the value of 5^0 ?

A. 0

B. 1

C. 5

D. Undefined

10 If $f(x) = 2x + 1$, what is $f(5)$?

A. 7

B. 10

C. 11

D. 15

11 A right triangle has a hypotenuse of 13 and one leg of 5. What is the other leg?

A. 8

B. 10

C. 12

D. 14

12 What is the scientific notation for 45,000?

A. 45×10^3

B. 4.5×10^4

C. 4.5×10^5

D. 0.45×10^5

8th Grade Math Quiz

(continued)

13 Solve the system: $x + y = 10$ and $x - y = 4$. What is x ?

A. 3

B. 5

C. 7

D. 8

14 What is $(-3)^2$?

A. -9

B. -6

C. 6

D. 9

15 A line passes through the origin with a slope of -2 . What is its equation?

A. $y = 2x$

B. $y = -2x$

C. $y = x - 2$

D. $y = -2$

8th Grade Math Quiz — Answer Key

1. B x = 7

Add 7 to both sides: $3x = 21$. Divide by 3: $x = 7$. Check: $3(7) - 7 = 21 - 7 = 14$.

2. A 5

Pythagorean theorem: $a^2 + b^2 = c^2$. $9 + 16 = 25$. Square root of 25 = 5.

3. C 32

$2^5 = 2 \times 2 \times 2 \times 2 \times 2 = 32$.

4. B 2

Slope = $(y_2 - y_1) / (x_2 - x_1) = (9 - 3) / (4 - 1) = 6 / 3 = 2$.

5. A 3^5

When multiplying powers with the same base, add the exponents: $3^2 \times 3^3 = 3^{(2+3)} = 3^5 = 243$.

6. B $y = 3x - 2$

Slope-intercept form is $y = mx + b$, where m is the slope and b is the y -intercept. So $y = 3x + (-2) = 3x - 2$.

7. B 12

$12 \times 12 = 144$, so the square root of 144 is 12.

8. B x = 5

Distribute: $2x + 6 = 16$. Subtract 6: $2x = 10$. Divide by 2: $x = 5$.

9. B 1

Any non-zero number raised to the power of 0 equals 1. This is a rule of exponents: $5^0 = 1$.

10. C 11

Substitute 5 for x : $f(5) = 2(5) + 1 = 10 + 1 = 11$. Function notation means 'plug in the value.'

11. C 12

$a^2 + 5^2 = 13^2$. $a^2 + 25 = 169$. $a^2 = 144$. $a = 12$.

12. B 4.5×10^4

Move the decimal point 4 places to the left: 4.5. The exponent is 4 because you moved 4 places. 4.5×10^4 .

13. C 7

Add the equations: $2x = 14$, so $x = 7$. Then $y = 10 - 7 = 3$. Check: $7 + 3 = 10$ and $7 - 3 = 4$.

14. D 9

$(-3)^2 = (-3) \times (-3) = 9$. A negative number squared is always positive. Note: $-3^2 = -(3^2) = -9$, but $(-3)^2 = 9$.

15. B $y = -2x$

Slope-intercept form: $y = mx + b$. Slope is -2 , y -intercept is 0 (passes through origin). So $y = -2x + 0 = -2x$.