

Change the following sentences into mathematical statements (expressions, equations, or inequalities).

1.) Five less than the square root of a number y . _____

2.) Twenty more than five times a number x is equal to one hundred. _____

3.) The quotient between a and b is at least seventeen. _____

4.) The cube of a number w is more than the sum of a number f and 2. _____

Simplify the following expressions.

5.) $17 - 4 + 3^2$

6.) $\sqrt{10^2 - 8^2}$

7.) $\frac{4 - 5 \cdot 4}{-2^2}$

8.) $7 - 2(4^2 \div 8 \cdot 2)$

Solve the following inequalities and graph the solutions on a number line.

9.) $-17 + 4x \geq -13$

10.) $6x - 12 > 10x + 20$



Solve the following systems of linear equations. Use any method.

11.) $\begin{cases} x = 4y + 3 \\ 2x + 3y = 10 \end{cases}$

12.) $\begin{cases} 2x + 3y = 180 \\ 2x + y = 90 \end{cases}$

In problems 11-18, solve the equations. If your answer is not an integer, express it as reduced fraction.

13.) $p - 1 = 5p + 3p - 8$

14.) $5x - 3(2x + 7) = 12$

15.) $\frac{2}{3}(6w - 9) = -(2w - 5)$

16.) $180 - y = 5(90 - y)$

17.) $g + (2g + 1) + (3g - 7) = 180$

18.) $\frac{n - 6}{n - 7} = \frac{9}{2}$

Factor the following quadratic expressions.

19.) $x^2 - 5x - 6$

20.) $2x^2 + 3x - 20$

Factor and solve.

21.) $2x^2 - 3x - 5 = 0$

22.) $n^2 + 7n + 15 = 5$

*23.) $8x^2 + 21 = -59x$