

Change the following into appropriate 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. If your answer is not an integer, express it as reduced fraction.

- 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 only the method listed with each.

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

Substitution Method

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

Elimination Method

In the following problems, 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.) $x^2 - 13x - 48 = 0$

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

Each of the following problems contains a line in 3 forms: a table of values, an equation, and a graph. One or more parts is missing from each problem. Complete any of the missing information for each.

Problem #	Table of values (x,y)	Equation ($y = mx + b$ form)	Graph												
23.)	<table border="1"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr> <td>-2</td> <td></td> </tr> <tr> <td>-1</td> <td>-1</td> </tr> <tr> <td>0</td> <td>1</td> </tr> <tr> <td>1</td> <td></td> </tr> <tr> <td>2</td> <td>5</td> </tr> </tbody> </table>	x	y	-2		-1	-1	0	1	1		2	5		
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