1 LINEAR EQUATIONS AND GRAPHS

EXERCISE 1-1

2. $3y - 4 = 6y - 19$

$3y = 6y - 15$

$3y - 6y = -15$

$-3y = -15$

$y = 5$

4. $5x + 2 > 1$

$5x > -1$

$x > -\frac{1}{5}$

6. $-4x \le 8$

$\frac{-4x}{-4} \ge \frac{8}{-4}$ (Dividing by a negative number)

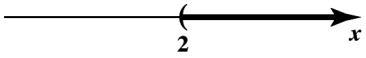
$x \ge -2$

8. $-2x + 8 < 4$

$-2x + 8 - 8 < 4 - 8$

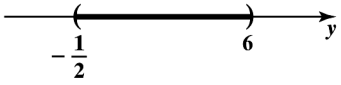
$-2x < -4$

$\frac{-2x}{-2} > \frac{-4}{-2}$ (Dividing by a negative number)

$x > 2$ or $(2, \infty)$ 

10. $-4 < 2y - 3 < 9$

$-1 < 2y < 12$

$-\frac{1}{2} < y < 6$ or $(-1/2, 6)$. 

12. $\frac{m}{3} - 4 = \frac{2}{3}$

Multiply both sides of the equation by 3 to obtain:

$m - 12 = 2$

$m = 14$

14. $\frac{x}{-4} < \frac{5}{6}$

Multiply both sides by (-4) which will result in changing the direction of the inequality as well.

$x > \frac{-20}{6}$ and simplified we have $x > -\frac{10}{3}$.

16. $-3y + 9 + y = 13 - 8y$

$-2y + 9 = 13 - 8y$

$6y = 4$

$y = \frac{4}{6} = \frac{2}{3}$

18. $-3(4 - x) = 5 - (x + 1)$

$-12 + 3x = 5 - x - 1$

$-12 + 3x = 4 - x$

$12 - 12 + 3x = 12 + 4 - x$

$3x = 16 - x$

$4x = 16$

$x = 4$