

Equations and Inequalities

Examples of basic equations

1. $x + 4 = 16$

$-4 \quad -4$

$x = 12$

2. $x - 3 = 15$

$+3 \quad +3$

$x = 18$

3. $4x = 40$

$\div 4 \quad \div 4$

$x = 10$

Now do the following exercises

Exercise 1

Solve the following equations

1 $x + 3 = 5$

2 $x + 5 = 9$

3 $x + 2 = 8$

4 $x - 3 = 9$

5 $x + 4 = 8$

6 $x - 2 = 4$

7 $x + 1 = 9$

8 $x + 4 = 5$

9 $x + 9 = 12$

10 $x + 4 = 10$

11 $x - 5 = 14$

12 $x - 7 = 4$

13 $x + 9 = 20$

14 $x + 1 = 1$

15 $x - 3 = 0$

16 $x + 8 = -1$

17 $x - 3 = -7$

18 $x + 4 = -8$

Exercise 2

Solve the following equations

1 $2x = 12$

2 $3x = 6$

3 $5x = 30$

4 $7x = 21$

5 $4x = 24$

6 $3x = 15$

7 $6x = 42$

8 $4x = 36$

9 $9x = 45$

10 $3x = 18$

11 $2x = 100$

12 $8x = 64$

13 $6x = 60$

14 $10x = 40$

15 $25x = 100$

16 $3x = -27$

17 $5x = -125$

18 $-2x = -6$

Examples of equations requiring more than 1 step to solve

1. $5x + 2 = 32$

$-2 \quad -2$

$5x = 30$

$\div 5 \quad \div 5$

$x = 6$

2. $7x + 8 = -6$

$-8 \quad -8$

$7x = -14$

$\div 7 \quad \div 7$

$x = -2$

3. $2x - 4 = 16$

$+4 \quad +4$

$2x = 20$

$\div 2 \quad \div 2$

$x = 10$

Now do the following exercise

1 $2a + 2 = 8$

2 $3b - 5 = 7$

3 $6e + 6 = 6$

4 $4c - 3 = 17$

5 $5d + 4 = 9$

6 $9f - 7 = 20$

7 $7g + 8 = 36$

8 $8h - 9 = 7$

9 $7i + 10 = 45$

10 $5j - 11 = 34$

11 $6k + 12 = 36$

12 $8m - 13 = 3$

13 $2a + 6 = 9$

14 $4a - 6 = 8$

15 $8a + 12 = 16$

16 $4a + 8 = 0$

17 $5x - 7 = -2$

18 $3x + 5 = -13$

Inequalities

Remember \geq means greater than or equal to

$>$ means greater than (arrow points to smaller number)

\leq means less than or equal to

$<$ means less than (arrow points to smaller number)

Now solve the following

1) $2x + 1 > 7$

2) $2x + 1 \geq 7$

3) $3x - 2 > 10$

4) $y + 5 \geq 1$

5) $2y + 3 > 3$

6) $5y - 1 \geq -11$

7) $4x + 5 > 17$

8) $2x - 2 > 18$

9) $3x - 1 < 11$

10) $5y - 3 \leq 27$

11) $7y + 4 \leq 4$

12) $8y + 3 \geq 59$

13) $3t + 4 > 1$

14) $6u + 14 < 2$

15) $3v + 2 > -16$

16) $5w + 1 \leq -34$

17) $2x + 7 \geq 3$

18) $4y - 1 \leq -25$

19) $2x + 3 > 11$

20) $5x - 7 < 13$

21) $7x - 8 \geq 13$

22) $6x + 5 \leq 35$

23) $3x + 4 \geq 16$

24) $2x + 1 \geq 19$