

Mrs. Allouch

Hour:-----

Date:-----

Study Guide(Semester I)

Mrs. Allouch

Keys

I can use Order of Operation to simplify

1. $4^3 \times 3^2 \div 4 = 64 \times 9 \div 4 = 576 \div 4 = 144$

a. 144

b. 18

c. 580

d. 200

2. $2(3+5) - 6 \div 2 = 2 \cdot 3 + 2 \cdot 5 - 6 \div 2 = 6 + 10 - 3 = 16 - 3 = 13$

a. 3

b. 13

c. 8

d. 10

3. $2(3) + 5 = 6 + 5 = 11$

a. 11

b. 13

c. 16

d. 18

4. $5 + 28 \div 4 = 5 + 7 = 12$

a. 16.5

b. 17

c. 10

d. 12

5. $5 \cdot 6 \div 3 \cdot 2 = 30 \div 3 \cdot 2 = 10 \cdot 2 = 20$

a. 36

b. 30

c. 20

d. 24

6. $9(3+1) - 8(5-2) = 9 \cdot 3 + 9 \cdot 1 - 8 \cdot 5 + 8 \cdot 2 = 27 + 9 - 40 + 16 = 36 - 40 + 16 = -4 + 16 = 12$

a. 12

b. -12

c. 14

d. -14

7. $(2+5)(10-6) = 7(4) = 28$

a. 11

b. 28

c. 30

d. 33

8. $3(6+1) = 3 \cdot 7 = 21$

a. 19

b. 20

c. 21

d. 22

9. $21 \div 3 + (7)(4) = 21 \div 3 + 28 = 7 + 28 = 35$

a. 30

b. 28

c. 52

d. 56

10. $45 - 8[2(3-1)] = 45 - 8[2(2)] = 45 - 8[4] = 45 - 32 = 13$

a. 148

b. 132

c. 15

d. 13

Use Distributive Property.

$$13) 3(-7 - 8n) = -21 - 24n$$

$$14) -8(1 + 5m) = -8 - 40m$$

$$15) 8(r + 1) = 8r + 8$$

$$16) 8(7x + 8) = 56x + 64$$

$$17) 2(6n - 8) = 12n - 16$$

$$18) -3(8 - b) = -24 + 3b$$

$$19) -5(8v - 2) = -40v + 10$$

$$20) -2(x - 5) = -2x + 10$$

$$21) -(3a - 3) = -3a + 3$$

$$22) -2(7 - 2n) = -14 + 4n$$

$$23) -8(5 - 3v) = -40 + 24v$$

$$24) -7(6x - 3) = -42x + 21$$

First, use Distributive Property, then Combine Like Terms to simplify each expression.

$$25) -n + 4(n + 1) = -n + 4n + 4 = 3n + 4$$

$$26) -3(1 - 3x) + 2x = -3 + 9x + 2x = -3 + 11x$$

$$27) -2(-3k + 4) - 7 = 6k - 8 - 7 = 6k - 15$$

$$28) -3p - (-8 + 4p) = -3p + 8 - 4p = 8 - 7p$$

$$29) -4 + 6(-4x + 3) = -4 - 24x + 18 = -24x + 14$$

$$30) 3n + 3(1 + 8n) = 3n + 3 + 24n = 27n + 3$$

$$31) -2 + 5(4 + 3r) = -2 + 20 + 15r = 18 + 15r$$

$$32) -1 + 3(m + 4) = -1 + 3m + 12 = 3m + 11$$

$$33) -(-n + 2) - 2n = n - 2 - 2n = -n - 2$$

$$34) -3(5 + 2x) - 7 = -15 - 6x - 7 = -6x - 22$$

I can write an algebraic expression from a given phrase.

1) Two more than twice a number is six.

translation

$$2 + 2x = 6$$

$$\begin{array}{cc} -2 & -2 \end{array}$$

$$\frac{2x}{2} = \frac{4}{2}$$

$$\boxed{x=2}$$

Key Words

more than: +

twice: $2 \cdot x$

is: =

2) A number split in half.

Key Words

split: $\div$

half: $\frac{1}{2}$

Math Translation

$$\frac{x}{2}$$

3) Eight less than three times a number is ten.

Key Words

less than: -

three times: $3 \cdot x$

is: =

Math Translation

$$3x - 8 = 10$$

$$\begin{array}{cc} +8 & +8 \end{array}$$

$$\frac{3x}{3} = \frac{18}{3}$$

$$\boxed{x=6}$$

4) The difference of a number and five.

Key Words

difference: -

Math Translation

$$x - 5$$

5) Six subtracted from a number tripled is nine.

Key Words

subtracted: -

tripled: $3 \cdot x$

is: =

$$3x - 6 = 9$$

$$\begin{array}{cc} +6 & +6 \end{array}$$

$$\frac{3x}{3} = \frac{15}{3}$$

$$\boxed{x=5}$$

6) Four less than the product of 7 and a number is one.

Key Words

less than: -

product: $\cdot$

is: =

Math Translation

$$7x - 4 = 1$$

$$\frac{7x}{7} = \frac{5}{7}$$

$$\boxed{x = \frac{5}{7}}$$

Problems Set:

Number Lines:

$$1. k + 20 < 1$$

$$\begin{array}{r} -20 \quad -20 \\ \hline k < -19 \end{array}$$

$$2. k - 3 \geq -1$$

$$\begin{array}{r} +3 \quad +3 \\ \hline k \geq 2 \end{array}$$

$$3. a + 16 \leq 10$$

$$\begin{array}{r} -16 \quad -16 \\ \hline a \leq -6 \end{array}$$

$$4. 24 \leq p + 7$$

$$\begin{array}{r} -7 \quad -7 \\ \hline 17 \leq p \\ p \geq 17 \end{array}$$

$$5. -9 + x > -2$$

$$\begin{array}{r} +9 \quad +9 \\ \hline x > 7 \end{array}$$

$$6. -3 \geq x + 5$$

$$\begin{array}{r} -5 \quad -5 \\ \hline -8 \geq x \\ x \leq -8 \end{array}$$

$$7. -13 \geq n - 4$$

$$\begin{array}{r} +4 \quad +4 \\ \hline -9 \geq n \\ n \leq -9 \end{array}$$

$$8. -5 + x < 2$$

$$\begin{array}{r} +5 \quad +5 \\ \hline x < 7 \end{array}$$

$$9. 6x + 2 - 5x \leq -7$$

$$\begin{array}{r} x + 2 \leq -7 \\ -2 \quad -2 \\ \hline x \leq -9 \end{array}$$

$$10. -3x - 5 + 4x > 8$$

$$\begin{array}{r} x - 5 > 8 \\ +5 \quad +5 \\ \hline x > 13 \end{array}$$

