

Name SOLUTIONS

Each of the 18 questions is worth 5 points plus 1 point for each of 10 homework problems for a total of 100

Find the value of the expression.

1) $\frac{3(8+8)+3 \cdot 3}{3(2-1)}$

$$\frac{3(16) + 9}{3(1)}$$

$$3(1)$$

$$\frac{48+9}{3}$$

$$\frac{57}{3} \quad \boxed{19}$$

Evaluate the expression for the given values. If necessary, round to the nearest tenth.

2) $\frac{x+y}{15x-5}$ $x=10, y=5$

$$\frac{(10) + (5)}{15(10) - 5}$$

$$15(10) - 5$$

$$\frac{15}{150 - 5}$$

$$\frac{15}{145}$$

$$\boxed{\frac{3}{29}}$$

Simplify.

3) $-\left|-\frac{3}{4}\right|$

$$-\left(\frac{3}{4}\right)$$

$$\boxed{-\frac{3}{4}}$$

Find the sum.

$$4) [16 + (-5)] + [24 + (-7)]$$

$$(16 - 5) + (24 - 7)$$

$$11 + 17$$

$$\boxed{28}$$

Find the difference.

$$5) -5 - [(16 - 1) - (-7 + 2)]$$

$$-5 - [15 - (-5)]$$

$$-5 - [15 + 5]$$

$$-5 - 20$$

$$\boxed{-25}$$

Perform the indicated operation.

$$6) \frac{-12(-6) - (-12)(-4)}{-6(3) - 3(-2)}$$

$$\frac{72 - 48}{-18 + 6}$$

$$\frac{24}{-12}$$

$$\frac{24}{-12}$$

$$\boxed{-2}$$

Use the distributive property to write without parentheses.

7) $-(-4m + 2n - 5p)$

$$\boxed{4m - 2n + 5p}$$

Simplify the expression by combining like terms.

8) $-\frac{3}{5}(z - 15) - \frac{1}{10}z$

$$-\frac{3}{5}z + \frac{3}{5}(15) - \frac{1}{10}z$$

$$-\frac{6}{10}z + 9 - \frac{1}{10}z$$

$$\boxed{-\frac{7}{10}z + 9}$$

Solve the equation.

9) $-7b + 1 + 5b = -3b + 6$

$$\begin{array}{r} -2b + 1 = -3b + 6 \\ +3b \quad \quad +3b \\ \hline \end{array}$$

$$\begin{array}{r} b + 1 = 6 \\ -1 \quad -1 \\ \hline \end{array}$$

$$\boxed{b = 5}$$

10) $-5(-6x + 6) + 3(-5 - 4x) = -16 + 19x$

$$30x - 30 - 15 - 12x = -16 + 19x$$

$$\begin{array}{r} 18x - 45 = 19x - 16 \\ \underline{-18x} \quad \underline{-18x} \end{array}$$

$$\begin{array}{r} -45 = x - 16 \\ \underline{+16} \quad \underline{+16} \\ -29 = x \end{array}$$

$$x = -29$$

11) $\frac{3}{7}s = \frac{3}{4}$

$$28 \left[\frac{3s}{7} \right] = \left[\frac{3}{4} \right] 28$$

$$\frac{12s}{12} = \frac{21}{12}$$

$$s = \frac{21}{12}$$

$$s = \frac{7}{4}$$

12) $7x + 4 = 3x + 6$

$$\begin{array}{r} 7x + 4 = 3x + 6 \\ \underline{-3x} \quad \underline{-3x} \end{array}$$

$$\begin{array}{r} 4x + 4 = 6 \\ \underline{-4} \quad \underline{-4} \end{array}$$

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

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

$$x = \frac{1}{2}$$

13) $4(3w + 4) = 2(4w + 24)$

$$\begin{array}{r} 12w + 16 = 8w + 48 \\ \underline{-16} \qquad \qquad \underline{-16} \end{array}$$

$$\begin{array}{r} 12w = 8w + 32 \\ \underline{-8w} \qquad \underline{-8w} \end{array}$$

$$\frac{4w}{4} = \frac{32}{4}$$

$$w = 8$$

Solve the equation by first clearing the fractions.

14) $-\frac{2}{3}x + 2x = \frac{6}{5}x + \frac{12}{5}$

$$15 \left[-\frac{2}{3}x + 2x \right] = \left[\frac{6}{5}x + \frac{12}{5} \right] 15$$

$$-10x + 30x = 18x + 36$$

$$20x = 18x + 36$$

$$\underline{-18x} \qquad \underline{-18x}$$

$$\frac{2x}{2} = \frac{36}{2}$$

$$x = 18$$

Solve the inequality, then graph the solution.

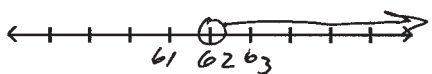
15) $\frac{4}{3}t \geq -24$



$$\left(\frac{3}{4}\right) \left(\frac{4t}{3}\right) \geq (-24) \left(\frac{3}{4}\right)$$

$$t \geq -18$$

16) $6(-7x - 14) - 5(x + 16) > 6(-7x - 16) - 7(x - 8)$



$$-42x - 84 - 5x - 80 > -42x - 96 - 7x + 56$$

$$-47x - 164 > -49x - 40$$

$$\begin{array}{r} +47x \\ \hline -47x - 164 > -49x - 40 \\ +47x > -49x - 40 + 47x \\ \hline -164 > -2x - 40 \end{array}$$

$$-164 > -2x - 40$$

$$\begin{array}{r} +40 \\ \hline -124 > -2x \end{array}$$

$$-124 > -2x$$

$$\begin{array}{r} -2x < -124 \\ \hline -2 < -62 \end{array}$$

$$x > 62$$

Solve the problem.

- 17) A merchant has coffee worth \$30 a pound that she wishes to mix with 70 pounds of coffee worth \$70 a pound to get a mixture that can be sold for \$40 a pound. How many pounds of the \$30 coffee should be used?

QUAN	\$/lb	VALUE
x	30	30x
70	70	4900
x+70	40	40(x+70)

$$30x + 4900 = 40(x + 70)$$

$$30x + 4900 = 40x + 2800$$

$$\begin{array}{r} -30x \\ \hline 4900 = 10x + 2800 \\ -2800 \\ \hline 2100 = 10x \end{array}$$

$$\frac{2100}{10} = \frac{10x}{10}$$

$$x = 210$$

210 POUNDS

- 18) A reservation clerk worked 10.35 hours one day. She spent twice as much time entering new reservations as she did verifying old ones and one and a half as much time calling to confirm reservations as verifying old ones. How much time did she spend entering new reservations?

ENTERING = 2x

VERIFYING = x

CONFIRMING = 1.5x

TOTAL = 10.35 hrs

$$2x + x + 1.5x = 10.35$$

$$4.5x = 10.35$$

$$x = 2.3$$

$$2x = 4.6$$

4.6 hrs ENTERING