

Ask your teacher if you need more equations to practice :)

Name _____

Review 3

Solve each equation. Check your answer!

$$1) \frac{80}{16} = \frac{16n}{16}$$

$$\boxed{5 = n}$$

check!

$$\begin{aligned} 80 &= 16n \\ 80 &= 16(5) \\ 80 &= 80 \checkmark \end{aligned}$$

$$2) -16 = m + 1$$

$$\frac{-16}{-1} = \frac{m+1}{-1}$$
$$\boxed{-17 = m}$$

check!

$$\begin{aligned} -16 &= m + 1 \\ -16 &= -17 + 1 \\ -16 &= -16 \checkmark \end{aligned}$$

$$3) -5 = \frac{a}{6} \cdot 6$$

$$\boxed{-30 = a}$$

check!

$$\begin{aligned} -5 &= \frac{a}{6} \\ -5 &= \frac{-30}{6} \\ -5 &= -5 \checkmark \end{aligned}$$

$$4) -22 = n - 15$$

$$\frac{-22}{+15} = \frac{n-15}{+15}$$
$$\boxed{-7 = n}$$

check!

$$\begin{aligned} -22 &= n - 15 \\ -22 &= -7 - 15 \\ -22 &= -22 \checkmark \end{aligned}$$

$$5) -5 = \frac{-a}{-1}$$

$$\boxed{5 = a}$$

check!

$$\begin{aligned} -5 &= -a \\ -5 &= -(5) \\ -5 &= -5 \checkmark \end{aligned}$$

Solve each equation.

$$6) -136 = 8(m-1)$$

$$\frac{-136}{+8} = \frac{8m-8}{+8}$$

$$\frac{-128}{8} = \frac{8m}{8}$$

$$\boxed{-16 = m}$$

$$7) \frac{-4-3v}{+4} = \frac{-52}{+4}$$

$$\frac{-3v}{+4} = \frac{-48}{+4}$$

$$\boxed{v = 16}$$

$$8) -8 + 10m = -8$$

$$\frac{-8}{+8} = \frac{-8+10m}{+8}$$

$$\frac{10m}{10} = \frac{0}{10}$$

$$\boxed{m = 0}$$

$$9) 5a - 6 = 89$$

$$\frac{5a-6}{+6} = \frac{89}{+6}$$

$$5a = 95$$

$$\boxed{a = 19}$$

$$10) 9 + \frac{x}{3} = 13$$

$$\begin{array}{r} -9 \quad -9 \\ \hline \end{array}$$

$$3 \cdot \frac{x}{3} = 4 \cdot 3$$

$$\boxed{x = 12}$$

$$12) -7(-3 + b) = -42$$

$$21 - 7b = -42$$

$$-7b = -63$$

$$\begin{array}{r} -7 \quad -7 \\ \hline \end{array}$$

$$\boxed{b = 9}$$

$$14) 8 - 2(2p - 6) = 52$$

$$8 - 4p + 12 = 52$$

$$\begin{array}{r} -4p + 20 = 52 \\ -20 \quad -20 \\ \hline \end{array}$$

$$-4p = 32$$

$$\boxed{p = -8}$$

$$16) 5r - 7 = 2r + 3r$$

$$5r - 7 = 5r$$

NO SOLUTION

$$18) -2(-6 + 6r) - 1 = 31 - 2r$$

$$12 - 12r - 1 = 31 - 2r$$

$$11 - 12r = 31 - 2r$$

$$\begin{array}{r} -11 \quad -11 \\ \hline \end{array}$$

$$\begin{array}{r} -12r = 20 - 2r \\ +2r \quad +2r \\ \hline \end{array}$$

$$-10r = 20$$

$$\boxed{r = -2}$$

$$20) -4 - 4(3a - 3) = -8a + 20$$

$$-4 - 12a + 12 = -8a + 20$$

$$-12a + 8 = -8a + 20$$

$$\begin{array}{r} +12a \quad +12a \\ \hline \end{array}$$

$$8 = 4a + 20$$

XXXXXXXXXX

XXXXXXXXXX

woops

XXXXXXXXXX

XXXXXXXXXX

Subtract 20

$$-12 = 4a$$

$$-3 = a$$

$$11) 14 - a = 5$$

$$\begin{array}{r} -14 \quad -14 \\ \hline -a = -9 \\ -1 \quad -1 \\ \hline \end{array}$$

$$\boxed{a = 9}$$

$$13) -4 - 8n = -100$$

$$\begin{array}{r} +4 \quad +4 \\ \hline -8n = -96 \\ -8 \quad -8 \\ \hline \end{array}$$

$$\boxed{n = 12}$$

$$15) -2(1 + 7n) - 5n = -78$$

$$-2 - 14n - 5n = -78$$

$$\begin{array}{r} -19n - 2 = -78 \\ +2 \quad +2 \\ \hline \end{array}$$

$$-19n = -76$$

$$\boxed{n = 4}$$

$$17) 3 - 2x - 7 + 3x = x - 4$$

$$-4 + x = x - 4$$

$$x - 4 = x - 4$$

REWRITE LEFT-HAND SIDE

IDENTITY

$$19) 7(m - 6) = -37 + 8m$$

$$\begin{array}{r} 7m - 42 = -37 + 8m \\ -7m \quad -7m \\ \hline \end{array}$$

$$-42 = -37 + 1m$$

$$\begin{array}{r} +37 \quad +37 \\ \hline \end{array}$$

$$\begin{array}{r} -5 = 1m \\ 1 \quad 1 \\ \hline \end{array}$$

$$\boxed{-5 = m}$$

Write and solve an equation for each of the problems below. (+4 Each)

1. **Travel Weight** Currently, airlines charge extra fees for having baggage that is overweight (50 pounds). Mr. Yeehaw is returning home to Germany after a trip to America and is hoping that he will be able to bring his entire NASCAR racing models in his suitcase. Mr. Yeehaw weighs 182.5 pounds. When he grabs the suitcase and steps on the scale, it reads 223.7 pounds. How much does the suitcase weigh?

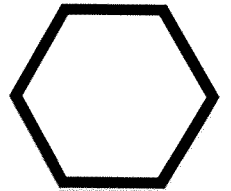
$$\begin{array}{r} 182.5 + x = 223.7 \\ -182.5 \quad -182.5 \\ \hline x = 41.2 \text{ pounds} \end{array}$$

41.2 pounds

2. A regular hexagon has 6 sides and a perimeter of 66 m. Find the length of each side.

11 m

$$\frac{6x}{6} = \frac{66}{6} \quad x = 11$$



3. A cellular phone company offers a contract that costs 14.99€ plus .06€ per minute. Find the total number of minutes talked if the bill for October was 20.21€.

$$\begin{array}{r} 14.99 + .06m = 20.21 \\ -14.99 \quad -14.99 \\ \hline .06m = 5.22 \\ \frac{.06m}{.06} = \frac{5.22}{.06} \\ m = 87 \end{array}$$

87 minutes

4. **Target Heart Rate** The target heart rate is the heartbeat rate during aerobic exercise that provides a benefit to your heart. The target heart rate for a person exercising at 70% intensity is given by the equation $y = 0.7(200 - x)$ where y is the target heart rate in beats per minute and x is the person's age in years.

How old is a person with a target heart rate of 112 beats per minute?

x = 40 years old

$$\begin{aligned} y &= .7(200 - x) \\ 112 &= .7(200 - x) \\ 112 &= 140 - .7x \\ -28 &= -.7x \\ \frac{-28}{-.7} &= \frac{-.7x}{-.7} \end{aligned}$$

5. Find the length of the rectangle where the length is 12 units more than the width and the perimeter is 8 times the width. (**Hint: Draw a picture!**)

LET x be width

$$\begin{aligned} 4x + 24 &= 8x \\ 24 &= 4x \\ 6 &= x \text{ (width)} \end{aligned}$$



$$\begin{aligned} \text{LENGTH} &= x + 12 \\ &= 6 + 12 \end{aligned}$$

$$\begin{aligned} \text{Perimeter} &= x + (x + 12) + x + (x + 12) \\ &= 4x + 24 \end{aligned}$$

Review 3A LENGTH = 18