

# Unit 6 Take Home and Check - Tier B

$$1) b + 10 - 3 = 44 \div 2$$

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$$b + 7 = 22$$

$$\underline{-7} \quad \underline{-7}$$

$$\boxed{b = 15}$$

$$2) n - 8 = 24$$

$$2) n - 8 = 24$$

$$\underline{+8} \quad \underline{+8}$$

$$\boxed{n = 32}$$

$$3) h - 6 = 32$$

$$3) h - 6 = 32$$

$$\underline{+6} \quad \underline{+6}$$

$$\boxed{h = 38}$$

$$4) -25 = j + 5$$

$$4) -25 = j + 5$$

$$\underline{-5} \quad \underline{-5}$$

$$-30 = j$$

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

$$5) a - 11 = -14$$

$$5) a - 11 = -14$$

$$\underline{+11} \quad \underline{+11}$$

$$\boxed{a = -3}$$

$$6) -29 + b = -16$$

$$6) \begin{array}{r} -29 + b = -16 \\ +29 \quad \quad +29 \\ \hline \end{array}$$

$$b = 13$$

$$7) -9 - r = 12$$

$$7) \begin{array}{r} -9 - r = 12 \\ +9 \quad \quad +9 \\ \hline \end{array}$$

$$-r = 21$$

$$r = -21$$

$$8) -5 = 4s + 6$$

$$8) \begin{array}{r} -5 = 4s + 6 \\ -6 \quad \quad -6 \\ \hline -11 = 4s \\ \frac{-11}{4} = \frac{4s}{4} \end{array}$$

$$s = \frac{-11}{4} \text{ or } -2\frac{3}{4}$$

$$9) \frac{4}{5}y = -72$$

$$9) \frac{4}{5} \times \frac{5}{4} y = -72 \times \frac{5}{4}$$

$$y = -90$$

$$10) 22 = \frac{p}{36}$$

$$10) \frac{36}{36} \times 22 = \frac{p}{36} \times 36$$

$$p = 792$$

$$11) \quad -15n = 75$$

$$11) \quad \frac{-15n}{-15} = \frac{75}{-15}$$

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

$$12) \quad 18 = -\frac{4}{9}m$$

$$12) \quad \frac{9}{4} \times 18 = -\frac{4}{9}m \times \frac{9}{4}$$

$$\boxed{m = -\frac{81}{2} = -40\frac{1}{2}}$$

$$13) \quad \frac{1}{8}h = 19$$

$$13) \quad 8 \times \frac{1}{8}h = 19 \times 8$$

$$\boxed{h = 152}$$

$$14) \quad \frac{c}{5} = -20$$

$$14) \quad 5 \times \frac{c}{5} = -20 \times 5$$

$$\boxed{c = -100}$$

$$15) \quad x + 7 \leq -18$$

$$15) \quad \begin{array}{r} x + 7 \leq -18 \\ \underline{-7} \quad \underline{-7} \end{array}$$

$$x \leq -25$$



Be sure to graph!

$$16) \quad 30 < 4b - 6$$

Be sure to graph!

$$16) \quad 30 < 4b - 6$$

$$\quad \underline{+6} \qquad \quad \underline{+6}$$

$$\frac{36}{4} < \frac{4b}{4}$$

$$b > 9$$



$$17) \quad -10 > n - 6.13$$

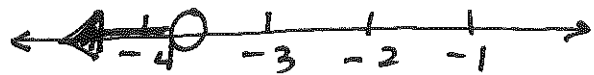
Be sure to graph!

$$17) \quad -10 > n - 6.13$$

$$\quad \underline{+6.13} \qquad \quad \underline{+6.13}$$

$$-3.87 > n$$

$$n < -3.87$$

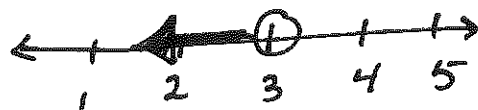


$$18) \quad 6a < 18$$

Be sure to graph!

$$18) \quad \frac{6a}{6} < \frac{18}{6}$$

$$a < 3$$



$$19) \quad 11k - 9 > 22$$

Be sure to graph!

$$19) \quad 11k - 9 > 22$$

$$\quad \underline{+9} \qquad \quad \underline{+9}$$

$$\frac{11k}{11} > \frac{31}{11}$$

$$k > 2\frac{9}{11}$$



20) At the Boston Aquarium there is a fish tank which has 73 fish in it. There are 3 more than 4 times as many clown fish as goldfish. How many of each type of fish are there?

$$\begin{aligned} 20) \text{ Let } x &= \text{goldfish} = 14 \\ 3 + 4x &= \text{Clowns} = 59 \end{aligned}$$

$$x + 3 + 4x = 73$$

$$\begin{array}{r} 5x + 3 = 73 \\ \underline{-3} \quad \underline{-3} \end{array}$$

$$5x = 70$$

$$x = 14$$

21) In the North Pole there are 186 male and female penguins, which were tagged. 30 less than 5 times the number of males were tagged than females. How many of each type were there?

$$\begin{aligned} 21) \text{ Let } x &= \text{females} = 36 \\ 5x - 30 &= \text{males} = 150 \end{aligned}$$

$$x + 5x - 30 = 186$$

$$\begin{array}{r} 6x - 30 = 186 \\ \underline{+30} \quad \underline{30} \end{array}$$

$$6x = 216$$

$$x = 36$$

- 22) The total weight of Sam and his son, Dan, is 250 pounds. Sam's weight is 10 pounds more than 3 times Dan's weight. How much does Dan weigh?

22)  
Let  $x = \text{Dan's}$  60 lbs  
 $3x + 10 = \text{Sam's}$

$$x + 3x + 10 = 250$$

$$4x + 10 = 250$$
$$\begin{array}{r} -10 \\ \hline \end{array} \quad \begin{array}{r} -10 \\ \hline \end{array}$$

$$4x = 240$$

$$x = 60$$

- 23) Gina and Mary were paid \$126.50 for babysitting over the weekend. Gina made \$18 less than 6 times as much as Mary. How much did each girl make? (round your answers to the nearest cent.)

23) Let  $x = \text{Mary} = \$20.64$   
 $6x - 18 = \text{Gina} = \$105.86$

$$7x - 18 = 126.50$$
$$\begin{array}{r} +18 \\ \hline \end{array} \quad \begin{array}{r} +18.00 \\ \hline \end{array}$$

$$7x = 144.50$$

$$x = \$20.64$$

24) Two consecutive numbers have a sum of 99. What are they?

$$24) \text{ Let } x = 1^{\text{st}} \rightarrow 49$$
$$x+1 = 2^{\text{nd}} \rightarrow 50$$

$$x+x+1 = 99$$

$$2x+1 = 99$$
$$\underline{-1} \quad \underline{-1}$$

$$\frac{2x}{2} = \frac{98}{2}$$

$$\boxed{x=49}$$

25) Three consecutive numbers have a sum of 375. What are the numbers?

$$25) \text{ Let } x = 1^{\text{st}} = 124$$

$$x+1 = 2^{\text{nd}} = 125$$

$$x+2 = 3^{\text{rd}} = 126$$

$$x+x+1+x+2 = 375$$

$$3x+3 = 375$$
$$\underline{-3} \quad \underline{-3}$$

$$3x = 372$$
$$x = 124$$

26)  $3y + 7 = -6y - 56$

$$26) \quad \begin{array}{r} 3y + 7 = -6y - 56 \\ \underline{-3y} \quad \quad \underline{-3y} \end{array}$$

$$\begin{array}{r} 7 = -9y - 56 \\ \underline{+56} \quad \quad \underline{+56} \end{array}$$

$$\begin{array}{r} 63 = -9y \\ \underline{-9} \quad \underline{-9} \end{array}$$

$$\boxed{y = -7}$$

$$27) .8k + 7 = 0.7k + 1$$

$$27) .8k + 7 = .7k + 1$$

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

$$.1k + 7 = 1$$

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

$$.1k = \frac{-6}{.1}$$

$$\boxed{k = -60}$$

$$28) -6 - 8c = 3c + 16$$

$$28) -6 - 8c = 3c + 16$$

$$\begin{array}{r} + 8c \\ \hline \end{array} \quad \begin{array}{r} + 8c \\ \hline \end{array}$$

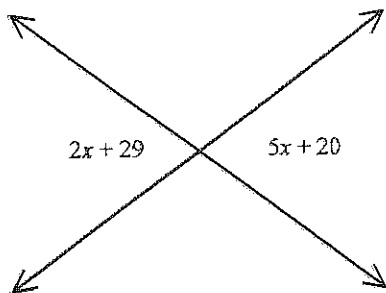
$$-6 = 11c + 16$$

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

$$\frac{11c}{11} = \frac{-22}{11}$$

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

29) Solve for x and then tell the measure of each angle. What is the name of this angle relationship?



29) Vertical angles

$$2x + 29 = 5x + 20$$

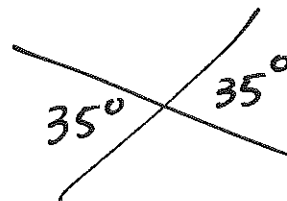
$$\begin{array}{r} - 2x \\ \hline \end{array} \quad \begin{array}{r} - 2x \\ \hline \end{array}$$

$$29 = 3x + 20$$

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

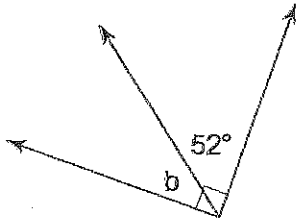
$$9 = 3x$$

$$x = 3$$





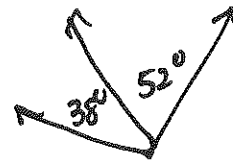
30) Solve for  $x$  and then tell the measure of each angle. What is the name of this angle relationship?



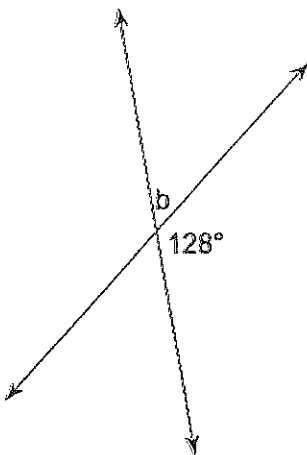
30) Complementary Angles

$$\begin{array}{r} b + 52 = 90 \\ -52 \quad -52 \\ \hline \end{array}$$

$$b = 38^\circ$$



31) Solve for  $x$  and then tell the measure of each angle. What is the name of this angle relationship?



31) Supplementary Angles

$$\begin{array}{r} b + 128 = 180 \\ -128 \quad -128 \\ \hline \end{array}$$

$$b = 52^\circ$$

