Unit 6 Take Home and Check - Tier C

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

$$b + 10 - 3 = 44 \div 2$$
$$b + 10 - 3 = 22$$
$$b + 7 = 22$$
$$-7$$
$$\boxed{b = 15}$$

2) $n - 8 = 24$

$$n - 8 = 24$$
$$+8 \quad +8$$
$$\boxed{n = 32}$$

3) $h - 6\frac{1}{3} = 32$

$$h - 6\frac{1}{3} = 32$$
$$+6\frac{1}{3} \quad +6\frac{1}{3}$$
$$\boxed{h = 38\frac{1}{3}}$$

4) $-25 = j + 5$

$$-25 = j + 5$$
$$-5 \quad -5$$
$$\boxed{-30 = j}$$

5) $a - 11 = -14$

$$a - 11 = -14$$
$$+11 \quad +11$$
$$\boxed{a = -3}$$

1

6) $-29 + b = -16$

$$-29 + b = -16$$
$$+29 \qquad +29$$
$$\boxed{b = 13}$$

7) $-9 - r = 12$

$$-9 - r = 12$$
$$+9 \qquad +9$$
$$\frac{-r = 21}{-1} \quad \frac{}{-1}$$
$$\boxed{r = -21}$$

8) $-5 = 4s + 6$

$$-5 = 4s + 6$$
$$-6 \qquad -6$$
$$\frac{-11}{4} = \frac{4s}{4}$$
$$\boxed{\frac{-11}{4} = s}$$

9) $3\frac{4}{5}y = -72$

$$3\frac{4}{5}y = -72$$
$$\frac{19}{5}y = \frac{-72}{1} \cdot \frac{5}{19}$$
$$y = \frac{-360}{19} = \boxed{-18\frac{18}{19}}$$

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

$$22 = \frac{p}{36} \cdot 36$$
$$\times 36$$
$$\boxed{792 = p}$$

2

11) $-15n = 75$

$$\frac{-15n}{-15} = \frac{75}{-15}$$

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

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

$18 = -\frac{4}{9}m$

$\times -\frac{9}{4}$ $\cdot -\frac{9}{4}$

$$\frac{18}{1} \cdot -\frac{9}{4} = \boxed{\frac{-81}{2} = m}$$

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

$$\frac{1}{8}h = 19 \cdot 8$$

$$\boxed{h = 152}$$

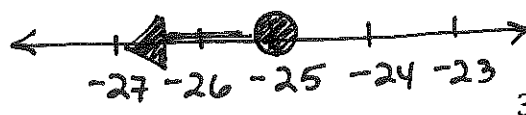*14)* $\frac{c}{5} = -20$

$$\frac{c}{5} = -20 \times 5$$

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

15) $x + 7 \leq -18$

$x + 7 \leq -18$

$\quad -7 \qquad -7$

$$\boxed{x \leq -25}$$

$-27 \; -26 \; -25 \; -24 \; -23$

3

16) $30 < 4b - 6$

$$30 < 4b - 6$$
$$+6 \qquad +6$$

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

$\boxed{9 < b}$ $b > 9$

17) $-10 > n - 6.13$
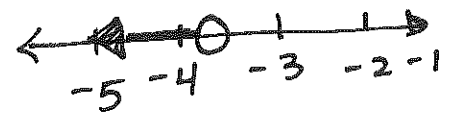
$$-10 > n - 6.13$$
$$+6.13 \qquad +6.13$$

$\boxed{-3.87 > n}$

$h < -3.87$

18) $-6a < 18$

$$\frac{-6a}{-6} < \frac{18}{-6}$$

$\boxed{a > -3}$

19) $11k - 9 > 134$

$$11k - 9 > 134$$
$$+9 \qquad +9$$

$$\frac{11k}{11} > \frac{143}{11}$$

$\boxed{k > 13}$

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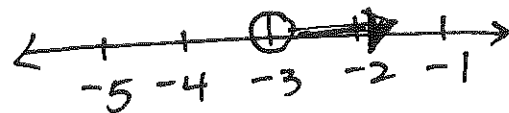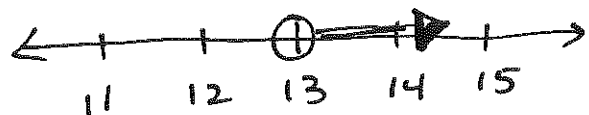
20) At the Boston Aquarium there is a fish tank, which has 73 fish in it. There are 3 more than 4 times as many clown fish as goldfish. How many of each type of fish are there?

$73 = 3 + 4x + x$

$73 = 3 + 5x$
$-3 \quad -3$

$\dfrac{70}{5} = \dfrac{5x}{5}$

$\boxed{14 = x}$ goldfish

$73 - 14 = \boxed{59}$ clown fish

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?

Let x = females
Let 5x - 30 = males

$x + 5x - 30 = 186$
$\qquad +30 \quad +30$

$\dfrac{6x}{6} = \dfrac{216}{6}$

$\boxed{x = 36}$ females

$186 - 36 = \boxed{150}$ males

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?

Let $x =$ Dan's weight
$3x + 10 =$ Sam's weight

$$x + 3x + 10 = 250$$
$$4x + 10 = 250$$
$$ -10 \quad -10$$

$$\frac{4x}{4} = \frac{240}{4}$$

$\boxed{x = 60}$ lbs. Dan's weight

$250 - 60 = \boxed{190}$ Sam's weight

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.)

Let $x =$ Mary
$6x - 18 =$ Gina

$$x + 6x - 18 = 126.50$$
$$7x - 18 = 126.50$$
$$ +18 \quad +18$$

$$\frac{7x}{7} = \frac{144.50}{7}$$

$\boxed{x = \$20.64}$ Mary

$126.50 - 20.64 = \boxed{\$105.86}$ Gina

6

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

Let $x = 1^{st}$ number
Let $x+1 = 2^{nd}$ number

$$x + x + 1 = 99$$
$$2x + 1 = 99$$
$$-1 \quad -1$$

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

$$\boxed{x = 49} \quad \boxed{x+1 = 50}$$

25) Two consecutive odd numbers have a sum of 376. What are the numbers?

Let $x = 1^{st}$ number
Let $x+2 = 2^{nd}$ number

$$376 = x + x + 2$$
$$-2 \qquad\qquad -2$$

$$\frac{374}{2} = \frac{2x}{2}$$

$$\boxed{187 = x} \quad \boxed{x+2 = 189}$$

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

$$3y + 7 = -6y - 56$$
$$+6y \qquad\quad +6y$$

$$9y + 7 = -56$$
$$-7 \quad -7$$

$$\frac{9y}{9} = \frac{-63}{9}$$

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

7

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

$$0.8k + 7 = 0.7k + 1$$
$$-0.7k \qquad -0.7k$$

$$0.1k + 7 = 1 - 7$$
$$\quad -7$$

$$\frac{0.1k}{0.1} = \frac{-6}{0.1}$$

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

$28) -6 - 8c = 3(c + 4)$

$28) -6 - 8c = 3(c + 4)$

$$-6 - 8c = 3c + 12$$
$$+8c \qquad +8c$$

$$-\frac{6}{12} = 11c + \frac{12}{12}$$

$$\frac{11c}{11} = \frac{-18}{11} \qquad \boxed{c = -1\tfrac{7}{11}}$$
$$or$$
$$-\tfrac{18}{11}$$

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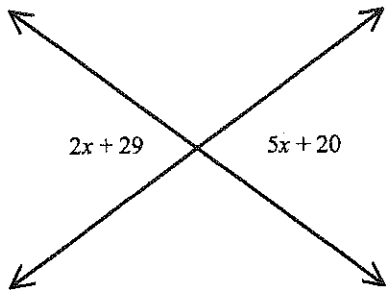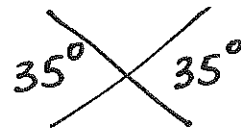

$2x + 29$ $5x + 20$

29)

Vertical angles

$$2x + 29 = 5x + 20$$
$$-2x \qquad\quad -2x$$

$$29 = 3x + 20$$
$$-20 \qquad\quad -20$$

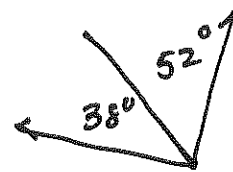$$\frac{3x}{3} = \frac{9}{3}$$

$$x = 3$$

$35°$ $35°$

8

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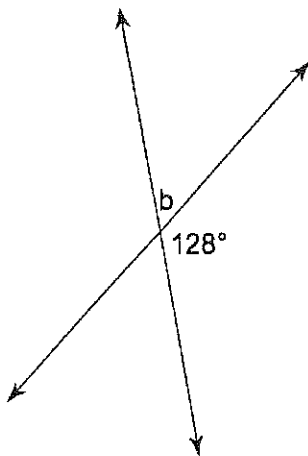

52°
b

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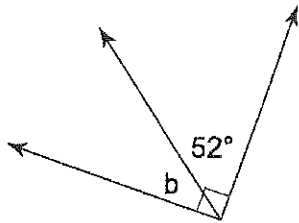
30) Complementary angles

$$52 + b = 90$$
$$-52 \qquad -52$$

$$b = 38$$

52°
38°

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

b
128°

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31) supplementary angles

$$b + 128 = 180$$
$$-128 \qquad -128$$

$$b = 52$$

52°
128°

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