

* Simplify Expressions AND solve
EQUATIONS AND INEQUALITIES UNLESS NOTED OTHERWISE.

① $8x^2 + 5x - 2x^2 + 4x$

$6x^2 + 9x$ ④

② $2x + y - (x - 2y)$

$2x + y - x + 2y$

$x + 3y$ ③

③ $2x + 5 = 6x - 7$

$5 = 4x - 7$

$12 = 4x \quad \therefore x = 3$ ⑤

④ $x + 4 < 3x - 8$

$4 < 2x - 8$
 $+8 \quad +8$

$12 < 2x$

$6 < x \quad \therefore x > 6$ ③

⑤ $4 - 8 \div (3 - 5)^2 + 2$

$4 - 8 \div (-2)^2 + 2$

$4 - 8 \div 4 + 2$

$4 - 2 + 2 = 4$ ③

$$\textcircled{6} \quad (3x+2)^2 = \boxed{9x^2 + 12x + 4} \quad \textcircled{D}$$

$$\textcircled{7} \quad 4x^2 - 1 = 0$$

$$(2x-1)(2x+1) = 0 \quad \boxed{x = \{-\frac{1}{2}, \frac{1}{2}\}} \quad \textcircled{A}$$

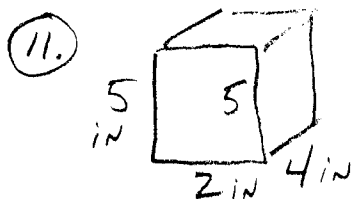
$$\textcircled{8} \quad g(x) = 3x - 1 \quad \text{domain} = \{-1, 2, 5\}$$

$$\text{Find: range} \quad \boxed{\text{range} = \{-4, 5, 14\}} \quad \textcircled{C}$$

$$\textcircled{9} \quad 2(y+1) - (3y+1)$$

$$2y+2-3y-1 \Rightarrow \boxed{-y+1} \quad \textcircled{B}$$

$$\textcircled{10} \quad \frac{\frac{2x}{-6x}}{\frac{5}{1}} \cdot \frac{\frac{2x}{10x}}{\frac{3}{1}} = \boxed{4x^2} \quad \textcircled{D}$$



Find: surface Area

$$\text{S.A.} \Rightarrow 2(5 \cdot 2) + 2(4 \cdot 5) + 2(2 \cdot 4)$$

$$20 + 40 + 16 = \boxed{76 \text{ in}^2} \quad \textcircled{D}$$

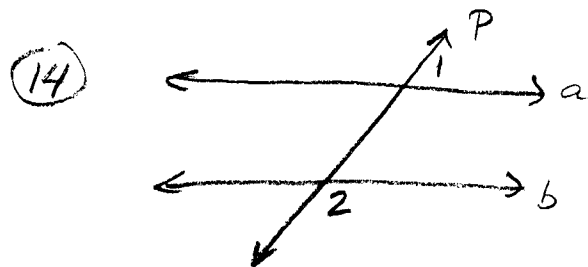
$$\textcircled{12} \quad \frac{3x+3x}{2} + \frac{9x-3x}{3}$$

$$= \frac{6x}{2} + \frac{6x}{3} = 3x + 2x = \boxed{5x} \quad \textcircled{D}$$

$$(13) \quad \frac{1}{2}x + \frac{1}{4}y + 2\left(\frac{1}{4}x + \frac{3}{4}y\right)$$

$$\frac{1}{2}x + \frac{1}{4}y + \frac{1}{2}x + \frac{3}{2}y$$

$$\boxed{x + \frac{7}{4}y} \quad (B)$$



$a \parallel b$

$$m\angle 1 = (3x)^\circ$$

$$m\angle 2 = (7x - 20)^\circ$$

Find x

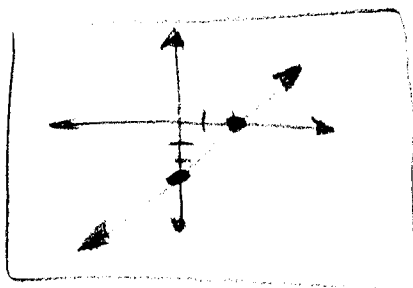
$$\text{Since } \angle 1 + \angle 2 = 180^\circ$$

$$3x + (7x - 20) = 180$$

$$10x = 200$$

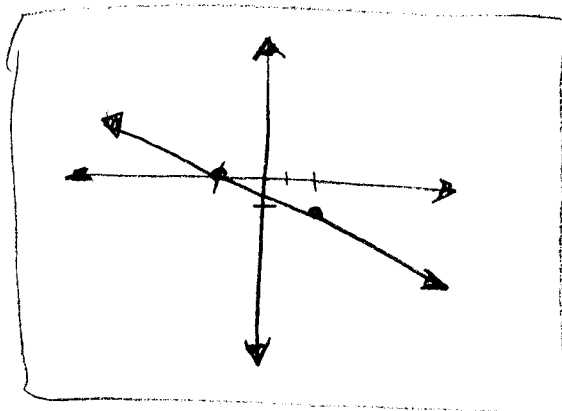
$$\boxed{x = 20} \quad (B)$$

(15) $x\text{-intercept} = 2$
 $y\text{-intercept} = -3$



(B)

(16) Line through
 $(-1, 0), (2, -1)$



(D)

$$(17) \quad 5.5x^2 - 5 + 0.5x^2 + 2.5$$

$$\boxed{6x^2 - 2.5} \quad \textcircled{C}$$

$$(18) \quad x(\underline{x-4}) - (\underline{x-4})$$

$$\boxed{(x-4)(x-1)} \quad \textcircled{C}$$

$$(19) \quad 2x^2 - 8x = 0$$

$$2x(x-4) = 0$$

$$\boxed{x = \{0, 4\}} \quad \textcircled{A}$$

$$(20) \quad \begin{aligned} x &= y-3 \\ x &= 2y+1 \end{aligned}$$

$$y-3 = 2y+1$$

$$\boxed{-4 = y} \quad \therefore \quad \boxed{x = -7}$$

$$\boxed{(-7, -4)} \quad \textcircled{D}$$

21) $18ab^2, 27a^2b$ GCF

$\boxed{9ab}$ (D)

22) $\frac{x-6}{2} = \frac{x}{4}$

$$4(x-6) = 2x$$

$$4x - 24 = 2x$$

$$2x = 24 \quad \therefore \boxed{x = 12} \text{ (D)}$$

23) Range of $\{(4, 4), (10, -1), (3, -5), (-4, 9)\}$

$\boxed{\text{Range} = y = \{-5, -1, 4, 9\}}$ (C)

24) $\frac{2x-1}{3} = 7$

$$2x - 1 = 21$$

$$2x = 22 \quad \therefore \boxed{x = 11} \text{ (C)}$$

25) Line through $(-1, -2), (5, 6)$ slope = ?

$$\frac{6+2}{5+1} = \frac{8}{6} = \boxed{\frac{4}{3} = m} \text{ (C)}$$

- JAR OF CANDY: PULL OUT AT RANDOM:
- (26) 12 orange
10 cherry
5 lemon
8 sour apple
35 TOTAL
- $P(\text{lemon or Cherry})$
- $P(1 \text{ or } c) = \frac{5+10}{35}$

$$= \frac{15}{35} = \boxed{\frac{3}{7} = P(l \text{ or } c)} \quad \textcircled{B}$$

(27) $f(x) = -x^2 + 3$

$$f(-1) = -(-1)^2 + 3$$

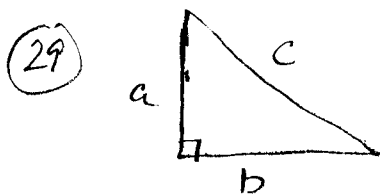
$$f(-1) = -1 + 3 = \boxed{2} \quad \textcircled{B}$$

- (28) 7 dollars pizza, 2 dollars delivery

$$C = 7P + 2$$

$$C = \text{COST} \quad P = \text{Number of pizzas}$$

or $\boxed{y = 7x + 2} \quad \textcircled{A}$



$$c^2 = a^2 + b^2$$

$c = \text{longest side}$

Ⓐ $3^2 \stackrel{?}{=} 2^2 + 2^2$ NO

Ⓑ $6^2 = 4^2 + 5^2$ NO

$\boxed{\textcircled{C} 13^2 = 5^2 + 12^2 \text{ YES}} \quad \textcircled{C}$

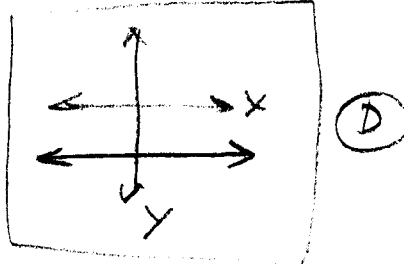
DATA SET:

30) $\underline{4}, \underline{5}, \underline{5}, \underline{3}, \underline{8}, \underline{5}, \underline{4}, \underline{2}, \underline{5}, \underline{2}$ Mode = ?

↑
MOST OFTEN

Mode = 5 (C)

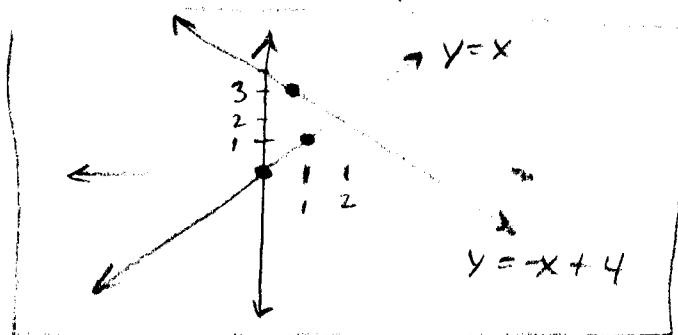
31) Function ?



(D)

32) $\begin{cases} X=Y \\ Y=4-X \end{cases}$

$\Rightarrow \begin{aligned} Y &= MX + b \\ Y &= X + 0 \\ Y &= -X + 4 \end{aligned}$



(A)

CK $\begin{cases} X=Y \\ Y=4-X \end{cases}$

$Y = 4 - Y$

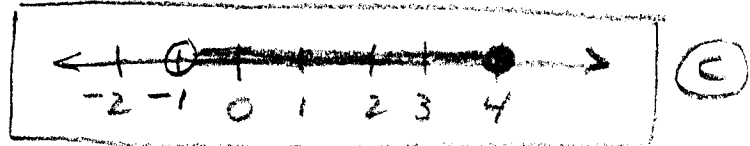
$2Y = 4 \therefore Y = 2, X = 2$ ✓

Graphs cross at (2, 2)

33) $\left(\frac{4x+5}{3} \right)^2 = \frac{16x^2 + 40x + 25}{9}$ (D)

$$(34) A_{\Delta} = \frac{1}{2}bh = \frac{1}{2}(4)(2) = \frac{1}{2}(8) = \boxed{4} \text{ (B)}$$

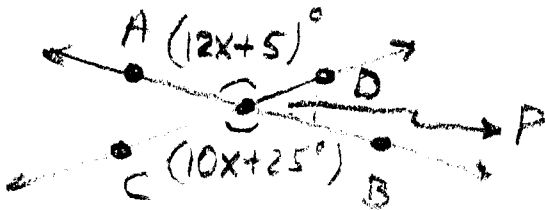
$$(35) -1 < x \leq 4$$



$$x > -1 \text{ AND } x \leq 4$$

$$(36) \text{ Graph of } \Rightarrow \boxed{y = -|x|} \text{ (C)}$$

$$(37) \text{ Find } m\angle APD?$$



$$12x + 5 = 10x + 25$$

$$2x = 20$$

$$x = 10 \therefore$$

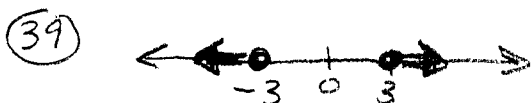
$$m\angle APD = 12(10) + 5 = \boxed{125^\circ}$$

(D)

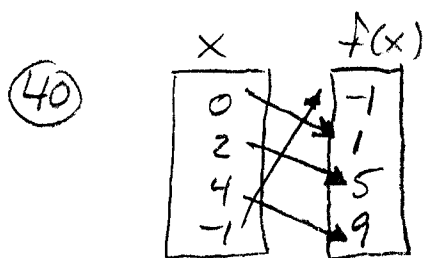
$$(38) 4x + 1 = 11$$

$$4x = 10$$

$$\boxed{x = \frac{10}{4} = \frac{5}{2}} \text{ (A)}$$



$$\boxed{x \leq -3 \text{ or } x \geq 3} \text{ (D)}$$


 $\Rightarrow$

x	Y
0	1
2	5
4	9
-1	-1

Which function is described by mapping?

ck: $f(x) \Rightarrow$ (A)

x	x-1
0	-1

 NO

(B)

x	x+1
0	1
2	3

 NO

(C)

x	2x-1
0	-1

 NO

(D)

x	2x+1
0	1
2	5
4	9
-1	-1

 (D)

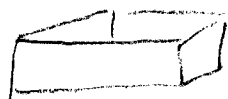
41 $\begin{cases} Y = 2X \\ X - Y = 8 \end{cases}$

$$X - (2X) = 8$$

$$-X = 8 \therefore X = -8$$

$$Y = 2(-8) = -16 \therefore (-8, -16) \text{ (A)}$$

(42)



$$V = 2016 \text{ in}^3 \quad V = b \cdot l \cdot w$$

$h = 14$ base is square; Find b

$$V = b \cdot b \cdot h \quad \therefore$$

$$2016 = b^2 \cdot 14 \quad \text{or} \quad 2016 = 14b^2$$

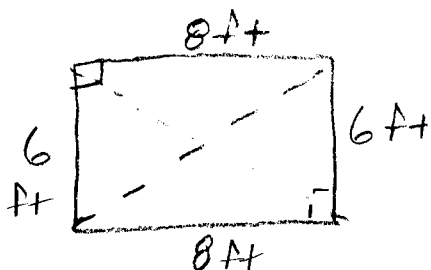
$$144 = \frac{144}{1} = \frac{1008}{7} = \frac{2016}{14} = b^2 \quad \downarrow$$

$$\therefore 144 = b^2$$

$$12 = b$$

$$\therefore \boxed{\text{base} = 12 \text{ in}} \quad \textcircled{A}$$

(43)



$d = \text{diagonal}$

$$d^2 = 6^2 + 8^2$$

$$d^2 = 36 + 64$$

$$d^2 = 100$$

$$\therefore \boxed{d = 10 \text{ ft}} \quad \textcircled{C}$$

$$\textcircled{44} \quad \frac{1}{4}x < -2$$

$$\frac{4}{1} \cdot \frac{1}{4}x < -2 \cdot \frac{4}{1}$$

$$\boxed{x < -8} \quad \textcircled{D}$$

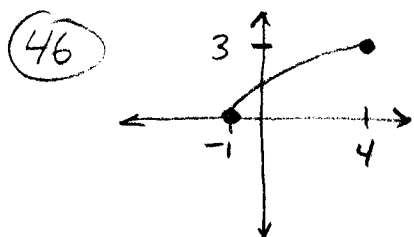
$$(45) \quad 4(x+2) < -5(2-2x)$$

$$\begin{array}{rcl} 4x+8 & < & -10+10x \\ -4x & & -4x \end{array}$$

$$\begin{array}{rcl} 8 & < & -10+6x \\ +10 & & +10 \end{array}$$

$$18 < 6x$$

$$3 < x \quad \therefore \boxed{x > 3} \text{ (D)}$$



Find range:

Range = y

$$y \geq 0 \text{ to } y \leq 3$$

$$\therefore \boxed{0 \leq y \leq 3} \text{ (A)}$$

(47)

$$\begin{array}{ccc} & \ominus & \\ & \swarrow & \\ (-1, 4) & , & (-4, 8) \\ x_1, y_1 & & x_2, y_2 \\ & \nwarrow & \\ & \ominus & \end{array}$$

Find Distance
Between Points:

$$D = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$= \sqrt{(-4+1)^2 + (8-4)^2}$$

$$= \sqrt{(-3)^2 + (4)^2}$$

$$= \sqrt{9+16} = \sqrt{25}$$

$$\boxed{D = 5 \text{ units}} \text{ (B)}$$

Find
 (48) EOL: $(2, 1), (4, 3)$ $m = \frac{3-1}{4-2} = \frac{2}{2} = 1 = m$
 x, y

$$y = mx + b$$

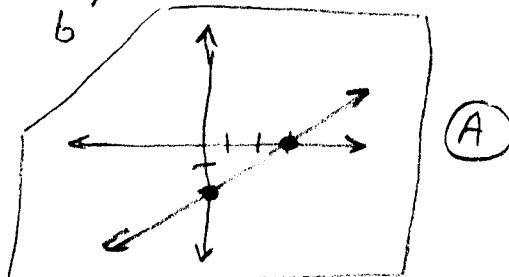
$$1 = 1 \cdot 2 + b \quad \therefore b = -1$$

$$1 = 2 + b$$

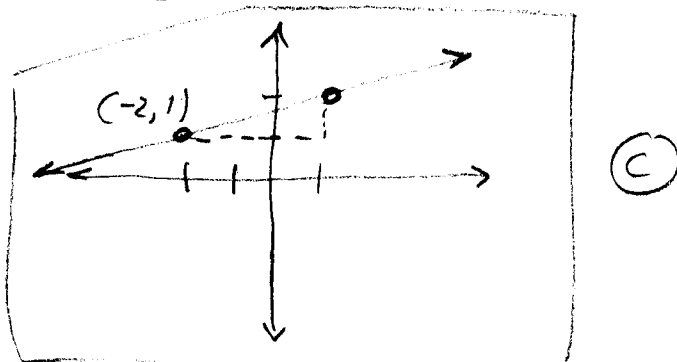
$$\therefore \boxed{y = 1x - 1} \text{ (A)}$$

or $y = x - 1$

Graph:
 (49) Slope = $\frac{2}{3}$ y -intercept = -2 $\therefore y = \frac{2}{3}x - 2$
 m b



Graph:
 (50) Slope = $\frac{1}{3}$ Point $(-2, 1)$



(51) $4.1 - |6.2 - 1.5|$ $\begin{array}{r} 6.2 \\ -1.5 \\ \hline 4.7 \end{array}$
 $4.1 - |4.7|$
 $4.1 - 4.7 = \boxed{-0.6} \text{ (B)}$

⑤② Factor $18x^3 - 3x^2 - 3x$

Use magic number method:

$$\begin{array}{l}
 3x(6x^2 - x - 1) \\
 \underbrace{\hspace{1.5cm}}_{\text{sum} \Rightarrow -1} \\
 \text{prod} \Rightarrow -6 \\
 \quad \swarrow \quad \searrow \\
 \quad +2 \quad -3 \\
 (6x^2 - 3x) + (2x - 1) \\
 3x(2x - 1) + 1(2x - 1) \\
 \boxed{3x(2x - 1)(3x + 1)} \text{ (C)}
 \end{array}$$

⑤③ $2x^2 - 4 = 7x$

Solve, use Quadratic Formula:

$$2x^2 - 7x - 4 = 0$$

$$a = 2 \quad b^2 - 4ac$$

$$b = -7 \quad (-7)^2 - 4(2)(-4)$$

$$c = -4 \quad 49 + 32 = \textcircled{81 = d}$$

$$x = \frac{-(-7) \pm \sqrt{81}}{2(2)} = \frac{7 \pm 9}{4} \quad \therefore \overset{\textcircled{A}}{x = \left\{4, -\frac{1}{2}\right\}}$$

⑤④ $4y + 6(1 - y) + 6 \leq 0$

$$4y + 6 - 6y + 6 \leq 0$$

$$-2y \leq -12$$

$$\boxed{y \geq 6} \text{ (C)}$$

$$(55) (2x^3y)^2 = 2^2 x^6 y^2 = \boxed{4x^6y^2} \text{ (D)}$$

$$(56) 2x(\underline{x-4}) + (\underline{x-4}) = 0 \quad \text{Solve By factoring:}$$

$$(x-4)(2x+1) = 0 \quad \therefore \boxed{x = \{4, -\frac{1}{2}\}} \text{ (D)}$$

$$(57) \begin{cases} 3x + 2y = 8 \\ x - 2y = 8 \end{cases}$$

$$\underline{4x = 16}$$

$$\boxed{x = 4} \therefore -2y = 4 \therefore \boxed{y = -2}$$

$$\Rightarrow \boxed{(4, -2)} \text{ (A)}$$

$$(58) \text{ Function? (Yes or No)} \quad \boxed{\text{(A) } \{(1, 2), (2, 4), (5, 4), (7, 1)\} \checkmark} \text{ (A) Yes}$$

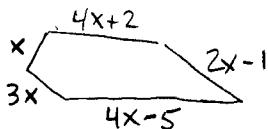
$$\text{(B)} \Rightarrow \text{NO, } x=0, x=2 \text{ "confused"}$$

$$\text{(C)} \Rightarrow \text{NO, } x=1 \text{ "confused"}$$

$$\text{(d)} \Rightarrow \text{NO, } x=-1 \text{ "confused"}$$

$$(59) P = x + (4x+2) + (2x-1) + (4x-5) + 3x = 38$$

(Perimeter)



$$14x - 4 = 38$$

$$14x = 42 \quad \therefore \boxed{x = 3} \text{ (B)}$$

$$(60) \text{ } \square \sim \text{ to } \square^{25} \Rightarrow \frac{25}{30} = \frac{5}{6}$$

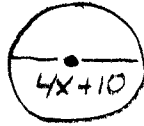
$$\text{(A) } \frac{5}{9} \text{ NO}$$

$$\boxed{\text{(B) } \frac{10}{12} = \frac{5}{6} \checkmark} \text{ (B)}$$

$$\text{(C) } \frac{12}{15} = \frac{4}{5} \text{ NO} \quad \text{(D) } \frac{20}{25} = \frac{4}{5} \text{ NO}$$

(Page 14)

(61)



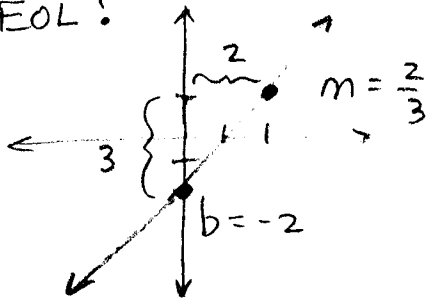
Find Area of Circle:

$$A = \pi r^2 = \frac{\pi d^2}{4} = \frac{\pi (4x+10)^2}{4}$$

$$A = \frac{\pi (16x^2 + 80x + 100)}{4} = \boxed{\pi (4x^2 + 20x + 25)} \text{ (D)}$$

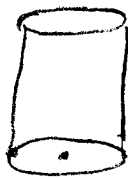
(62)

EOL?



$$\boxed{y = \frac{3}{2}x - 2} \text{ (B)}$$

(63)



d = 4 ft

Find volume of
cylindrical oil
TANK:

$$\text{Cylinder} \Rightarrow V = \pi r^2 h \text{ or } \frac{\pi d^2 h}{4}$$

$$V = \frac{3.14 (4)^2 10}{4}$$

$$V = 31.4 \cdot 4 = 125.6 \text{ ft}^3$$

$$\approx \boxed{125 \text{ ft}^3} \text{ (A)}$$

(64)

$$N + (N+2) + (N+4) = 69 \quad N \Rightarrow \text{odd integer}$$

The
sum of
3consecutive
odd
integers
is

69

$$3N + 6 = 69$$

$$3N = 63$$

$$N = 21 \quad \therefore \text{largest number is } \boxed{25} \text{ (C)}$$

BOX OF CANDIES, CHOOSE RANDOMLY:

- (65) 4 cherries FIND: $P(\text{maple, maple})$ w/ NO replacement
2 maple

3 caramel

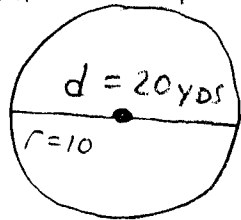
3 orange

$$\Rightarrow \frac{2}{12} \cdot \frac{1}{11}$$

12 TOTAL

$$\Rightarrow \frac{1}{6} \cdot \frac{1}{11} = \boxed{\frac{1}{66}} \text{ (C)}$$

- (66) Area of crop circle?



$$A = \pi r^2 = 3.14(10)^2 = 3.14(100) = \boxed{314 \text{ yd}^2} \text{ (C)}$$

- (67) Find two numbers:
Sum of two numbers = 88
Larger is 3 times smaller + 4

use x, y
↑
smaller

$$x + y = 88$$

$$\boxed{3x + 4} = y$$

$$x + (3x + 4) = 88$$

$$4x + 4 = 88$$

$$4x = 84$$

$$x = 21$$

$$\text{(A)} \quad \boxed{x = 21 = \text{smaller}}$$

(68) $7 \geq 3 - 2x$

$$4 \geq -2x$$

$$-2 \leq x$$

$$\therefore \boxed{x \geq -2}$$

A number line with a solid dot at -2 and an arrow pointing to the right. The number 0 is also marked on the line.

(69) $16y^4 - 81$ Factor completely:

$$(4y^2 - 9)(4y^2 + 9)$$

$$(2y - 3)(2y + 3)(4y^2 + 9) \quad \textcircled{B}$$

(70) Find Carla's and Juan's wages, Carla's is answer:
 CARLA $\Rightarrow 3 \frac{\$}{\text{hr}}$ more THAN Juan } Use C, I
 $4C + 2I = 60$ Find C } for rates

$$C = (3 + J)$$

$$\therefore 4(3 + J) + 2J = 60$$

$$12 + 4J + 2J = 60$$

$$6J = 48$$

$$J = 8 \quad \therefore C = 3 + 8 = 11 \frac{\$}{\text{hr}} \quad \textcircled{B}$$

CARLA

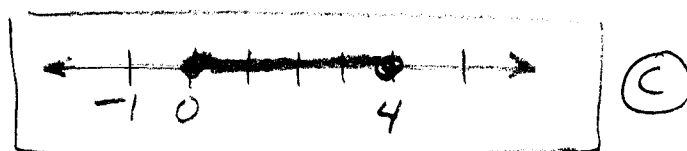
GRAPH:

(71) $3 \geq x - 1 \geq -1$

$$3 \geq x - 1 \quad \text{AND} \quad x - 1 \geq -1$$

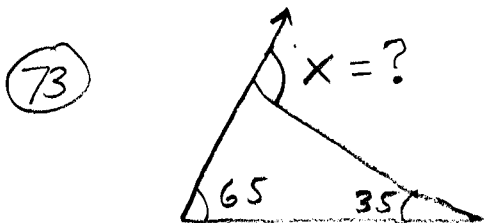
$$4 \geq x \quad \{ \quad x \geq 0$$

$$x \leq 4 \quad \text{AND}$$



72 Find Slope $\Rightarrow (-2, 1), (3, -1)$

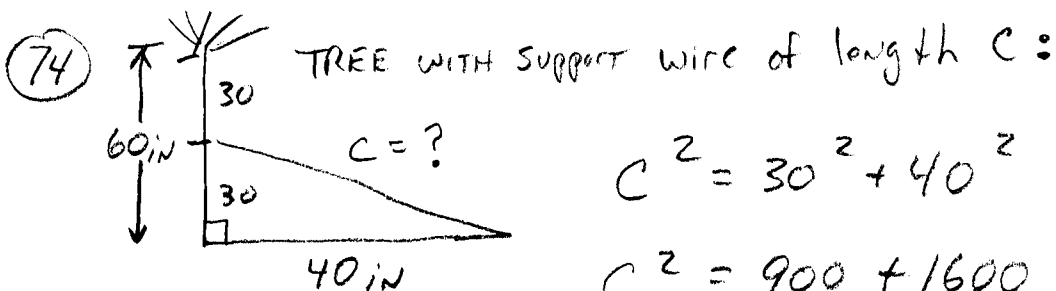
$$\frac{-1-1}{3+2} = \boxed{\frac{-2}{5} = m} \quad (A)$$



$$X = 180 - [180 - (65 + 35)]$$

$$X = 180 - [180 - 100]$$

$$\boxed{X = 100^\circ} \quad (B)$$



$$C^2 = 30^2 + 40^2$$

$$C^2 = 900 + 1600 = 2500$$

$$C = \sqrt{2500} = \boxed{50 \text{ in}} \quad (B)$$

75

$$\frac{1 \text{ EURO}}{1.25 \text{ USD}} = \frac{E}{160 \text{ USD}}$$

$$\therefore 1.25E = 160$$

$$E = \frac{160}{1\frac{1}{4}} = \frac{160}{\frac{5}{4}}$$

Since $1.25 = 1\frac{25}{100} = 1\frac{1}{4}$

$$E = \frac{160 \cdot 4}{5} = 32 \cdot 4$$

$$\boxed{E = 128} \quad (B)$$

Euros

76) $x^2 + 2x = 4$ MATCH THE "VERBAL" STATEMENT:

↓

the square of a number x plus two times the number x is 4

(D)

77) MARINADE Recipe 1 cup orange juice : 2 parts orange juice : 1 part lemon : 3 parts olive oil

1 cup orange juice : ? olive oil ?

1 cup of is used, how much olive oil is needed?

$\frac{2}{3} = \frac{1}{x} \therefore 2x = 3$

$x = \frac{3}{2}$ CUPS (B)

78) 100, 95, 98, 100, 80, 92, 91 } Quiz scores, Find range.

Range $\Rightarrow$ MAX - min

$\Rightarrow 100 - 80 = 20$ (B)

Range

MATCH expression to words:

79) Twice a number subtracted from 14 equals 4

$14 - 2x = 4$ (D)

80) Alexi (A) 240mi Jobo (J) } Leave Home AT Same Time, How Long TO Meet?

$r = 55 \frac{\text{mi}}{\text{hr}} \rightarrow$ $\leftarrow r = 65 \frac{\text{mi}}{\text{hr}}$

$d = 55t$ $t = t$ $240 - d = 65t$

$\therefore \frac{d}{55} = \frac{(240 - d)}{65}$

$65d = 55(240 - d)$

$d = \frac{55}{65}(240 - d)$

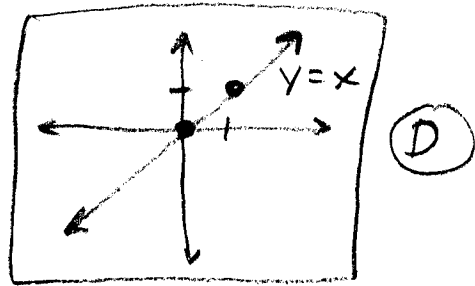
$d = \frac{11}{13} \cdot \frac{240}{1} - \frac{11}{13}d$

$\frac{13}{13}d + \frac{11}{13}d = \frac{2640}{13}$

$d = \frac{2640}{13} \cdot \frac{13}{24} = 110 \text{ mi} @ 55 \frac{\text{mi}}{\text{hr}} = 2 \text{ hrs}$ (B)

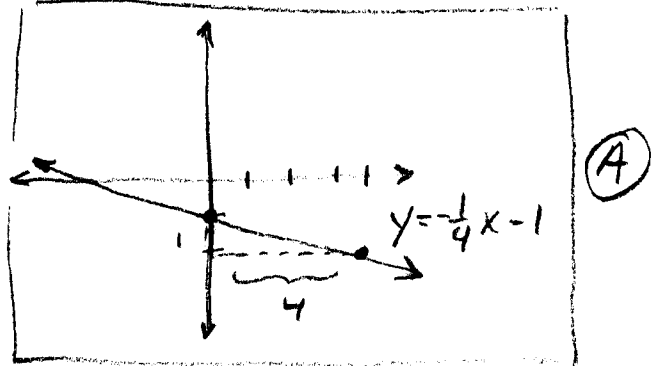
Page 19

81) GRAPH: $y = x$
 $y = mx + b$
 $\downarrow \quad \downarrow$
 $1 \quad 0$

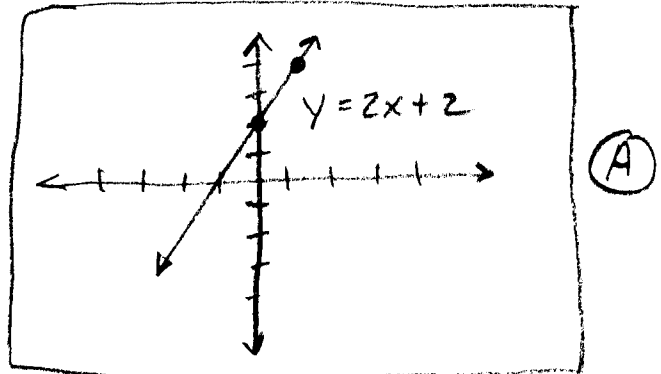


82) GRAPH: $2y = -\frac{1}{2}x - 2$
 $\frac{2y}{2} = \frac{-\frac{1}{2}x - 2}{2}$

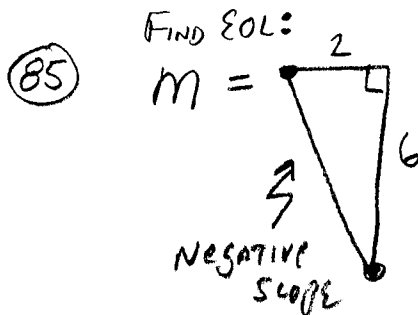
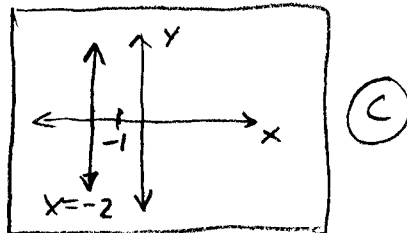
$y = -\frac{1}{4}x - 1$
 $\uparrow \quad \uparrow$
 $m \quad b$



83) GRAPH: $f(x) = 2x + 2$
or $y = 2x + 2$
 $\uparrow \quad \uparrow$
 $m \quad b$



84) GRAPH: $x = -2$
 $\Rightarrow$
VERTICAL
LINE

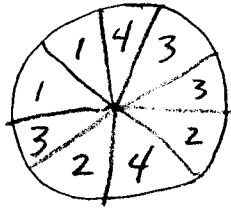


$m = \frac{6}{2} = 3$

$b = -3$

$\therefore y = 3x - 3$

86 SPINNER:



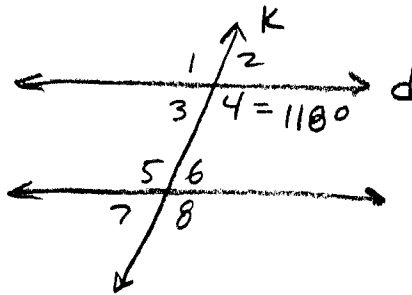
$$P(1, 3) = ?$$

$$P(1) = \frac{2}{9}$$

$$P(3) = \frac{3}{9} = \frac{1}{3}$$

$$P(1, 3) = \frac{2}{9} \cdot \frac{1}{3} = \boxed{\frac{2}{27}} \text{ (D)}$$

87



$d \parallel e$

$$m\angle 4 = 118^\circ$$

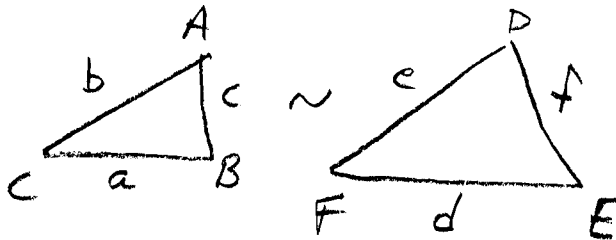
$$m\angle 6 + m\angle 7 = ? \text{ FIND:}$$

$$m\angle 6 = 180 - 118 = 62^\circ$$

$$m\angle 6 = m\angle 7$$

$$\therefore m\angle 6 + m\angle 7 = 62 + 62 = \boxed{124^\circ} \text{ (C)}$$

88



Which is true?

Check each proportion:

(A) $\frac{a}{b} \stackrel{?}{=} \frac{d}{f}$ No, $\frac{a}{b} = \frac{d}{e}$

(B) $\frac{a}{b} \stackrel{?}{=} \frac{e}{d}$ No, $\frac{a}{b} = \frac{d}{e}$

(C) $\frac{a}{b} \stackrel{?}{=} \frac{f}{e}$ No, $\frac{a}{b} = \frac{d}{e}$

(D) $\frac{a}{b} \stackrel{?}{=} \frac{d}{e}$ Yes (D)

GRAPH SOLUTIONS:

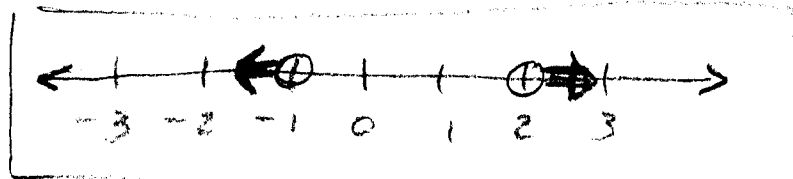
(89)

$$\begin{array}{ccc} X+1 > 3 & \text{or} & 2X-1 < -3 \\ -1 & -1 & +1 \quad +1 \end{array}$$

$$\boxed{X > 2}$$

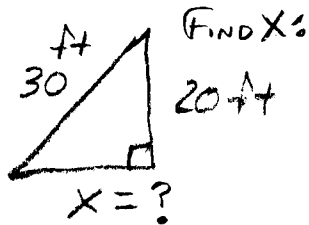
$$\text{OR } \frac{2X}{2} < \frac{-2}{2}$$

$$\boxed{X < -1}$$



(C)

(90)



$$c^2 = a^2 + b^2$$

$$30^2 - 20^2 = X^2$$

$$900 - 400 = 500 = X^2$$

$$X = \sqrt{500} = \sqrt{100 \cdot 5} = \boxed{10\sqrt{5}} \text{ ft} \quad (B)$$

(91) Number of Poppers: { 9 13 8 10 10

FIND MEDIAN: $\Rightarrow$ 8 9 10 10 13



(D)

(92) Direct Variation $\Rightarrow y = mx$ FIND EOL:

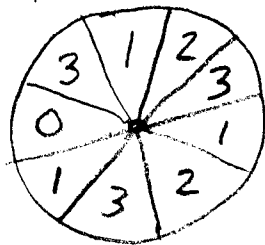
$$X=2 \text{ when } Y = -\frac{1}{2} \Rightarrow \frac{-\frac{1}{2}}{2} = \frac{m \cdot 2}{2}$$

$$-\frac{1}{4} = m$$

$$\therefore \boxed{y = -\frac{1}{4}x} \quad (B)$$

(93)

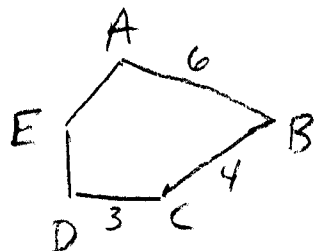
SPINNER



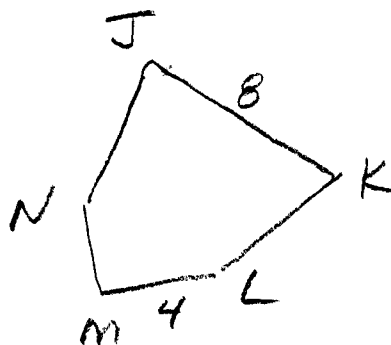
$$P(3) = ?$$

$$P(3) = \frac{3}{9} = \boxed{\frac{1}{3}} \quad (B)$$

(94)



~

Find: $\overline{KL}$

$$\frac{\overline{AB}}{\overline{BC}} = \frac{\overline{JK}}{\overline{KL}}$$

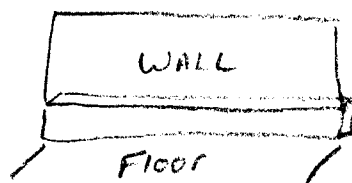
$$\therefore \frac{6}{4} = \frac{8}{\overline{KL}}$$

$$6\overline{KL} = 32$$

$$\overline{KL} = \frac{32}{6} = \boxed{\frac{16}{3} = 5\frac{1}{3} \text{ ft}} \quad (C)$$

Find area of front of baseboard:

(95)



Baseboards

$$A = lw$$

Given:

$$\text{Baseboards: } L = 240 \text{ ft}$$

$$W = 4 \text{ in} = \frac{1}{3} \text{ ft}$$

$$\text{thick} = \frac{1}{2} \text{ in} = \frac{1}{24} = \frac{1}{48} \text{ ft}$$

$$240 \text{ ft}$$

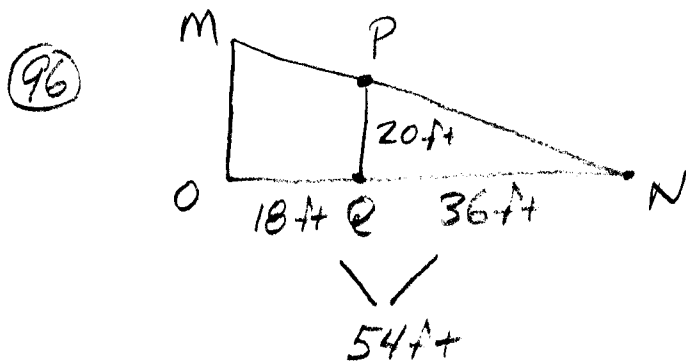
Front = PAINT

$$\frac{1}{3} \text{ ft}$$

$$A = 240 \cdot \frac{1}{3}$$

$$A = 80 \text{ ft}^2$$

(A)



$\Delta MNO \sim \Delta PNQ$
Find $\overline{MO}$

$$\frac{\overline{MO}}{\overline{ON}} = \frac{\overline{PQ}}{\overline{QN}} \quad \therefore \quad \frac{\overline{MO}}{54} = \frac{20}{36}$$

$$36\overline{MO} = 20 \cdot 54 \quad \therefore \quad \overline{MO} = \frac{20 \cdot 54}{36} = \boxed{30 \text{ ft}} \quad \textcircled{C}$$

(97) Find Midpoint: $(-1, 7)$, $(5, -9)$ $M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

x_1, y_1 x_2, y_2

$$\begin{array}{r} -1, 7 \\ + \quad 5, -9 \\ \hline 4, -2 \end{array} \quad \begin{array}{l} x = \frac{4}{2} = 2 \\ y = \frac{-2}{2} = -1 \end{array} \quad \therefore \quad \boxed{M = (2, -1)} \quad \textcircled{A}$$

(98) Test Scores: 98, 95, 95, 92, 90, 88, 72, x] $^8_{\text{tests}}$

A $\Rightarrow$ MEAN ≥ 90 , Find LOWEST x to get A?

$$\begin{array}{r} 98 \\ 90 \\ 90 \\ 92 \\ 88 \\ 88 \\ 72 \\ \hline 630 \end{array}$$

$$\frac{630 + x}{8} \geq 90$$

$$\begin{array}{r} 630 + x \geq 720 \\ -630 \quad -630 \\ \hline x \geq 90 \end{array} \quad \textcircled{B}$$

(99) Model: Scale $\Rightarrow \frac{1}{87} = \frac{8 \text{ in}}{l}$ $\leftarrow$ length of model
 Train Engine $\leftarrow$ Find: l of real engine

$$l = 8 \cdot 87 \text{ in} = 696 \text{ in}$$

$$\therefore l = \frac{696}{12} = \boxed{58 \text{ ft}} \text{ (A)}$$

(100) $y = -2x + 1$ Which table matches function?

(A)

X	Y	$\stackrel{?}{=} -2x + 1$
0	1	$-2(0) + 1 \checkmark$
1	-4	$-2(1) + 1 \neq -4$
2	-2	

Check each table:

(B)

X	Y	$\stackrel{?}{=} -2x + 1$
0	-1	No, see (A)

(C)

X	Y	
0	-1	No, see A

(D)

X	Y	$\stackrel{?}{=} -2x + 1$
0	1	$-2(0) + 1 = 1 \checkmark$
1	-1	$-2(1) + 1 = -1 \checkmark$
2	-3	$-2(2) + 1 = -3 \checkmark$

(D)

END: WHEW 😊 / me.c.