

$$(16) 1200 - \frac{1}{5}(1200) - \frac{1}{3}(1200) - \frac{3}{10}(1200)$$

$$(17) 4x + 1 > 6x + 21$$

$$(18) \frac{2}{300} = \frac{8}{N} \quad N =$$

$$(19) -2.2N + 260.55 \leq 150.55$$

$$(20) \frac{24}{25} = \frac{N}{200}$$

$$(21) \frac{2}{50} = \frac{N}{200}$$

$$(22) T = PR \quad \text{find } T \text{ if } P = 29000, R = 8\%$$

$$(23) A = \pi r^2 \quad \text{find } A \text{ if } \pi = 3.14, r = 40$$

$$(24) y = -2x - 4 \quad \text{graph}$$

x	y
0	-4
-2	0

$$(25) \frac{1+2+5}{1+2+3+3+5+6} \quad \text{simplify}$$

$$(26) A = PR \quad \text{find } A \quad P = 1200 \quad R = 90\%$$

$$(27) C = \pi D \quad \text{find } \pi \text{ if } C = 37.68, D = 12$$

$$(28) x + x + x + 2 + 2 = 50 + 10 + 2 + 2$$

$$(29) 90000 = N + 40,000 + 30,000 - 10,000 + 20,000$$

$$(30) (-8)(-32.2)$$

$$(31) (-8)(4.4)$$

32 $240 \leq 12N + 24$

33 $50 - 3N = 20.03$

34 $P = C^2 - \frac{1}{2}\pi r^2$, $C=12$, $\pi=3.14$, $r=6$

35 $V = \frac{1}{3}r^2H$, $r=6$, $H=10$

36 $A = \frac{1}{2}(B+C)H$, $B=10$, $C=12$, $H=4$

37 $3N - 10 = -40$

38 $-93 + 4N = 7$

39 $\frac{N}{2} + 19 = 12$

40 $\frac{N}{3} + 2.7 = 5.9$

41 $f(x) = 4x$ graph

x	f(x)
0	
1	

42 $f(x) = -2x + 6$ graph

x	f(x)
0	
1	

43 $\{1, 1, 2, 2, 2, 4, 4, 5, 5, 5, 5, 6, 6\}$ find mode

44 $f(x) = x^2 - 1$ find $f(-4)$

45 $f(x) = (x-1)(x-3)$ find $f(2)$

46 $f(x) = x^2 - 3x - 1$ find $f(-4)$

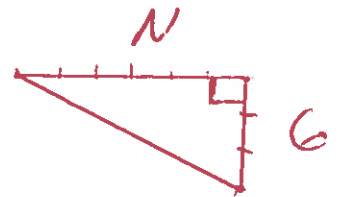
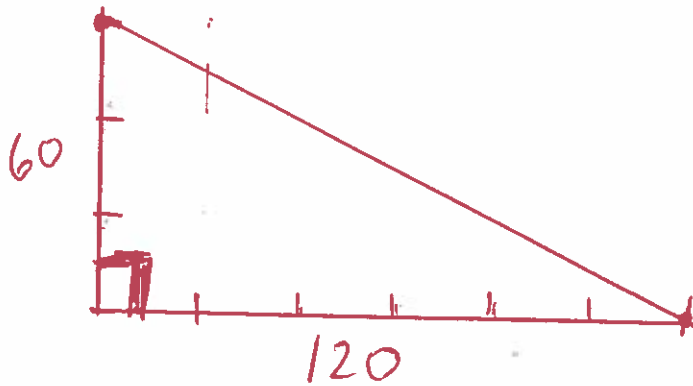
47

JAR of Jelly Beans

Color of Jelly Beans	Frequency
RED	18
Green	26
Blue	21
Purple	20
Orange	15

What is the probability of choosing a Red or Green Jelly bean at random?

48



The triangles are similar. Find the value of N .

49

$$2.25x + 100 = 2.20x + 600$$

① $y = kx$ find k , $x=3$, $y=45$

$$45 = k(3)$$

$$45 = 3k$$

$$\frac{45}{3} = \frac{3k}{3}$$

$$15 = k$$

$$\begin{array}{r} 15 \\ 3 \overline{) 45} \\ \underline{-(31)} \\ 15 \\ \underline{-(15)} \\ 0 \text{ rem} \end{array}$$

② $C = \pi D$ find C , $\pi = 3.14$, $D = 24$

$$C = 3.14(24)$$

$$C = 75.36$$

$$\begin{array}{r} 24 \\ \times 3.14 \\ \hline 196 \\ 24 \\ 72 \\ \hline 75.36 \end{array}$$

3

$$\frac{8}{8+2+10} =$$

$$\frac{8}{20} =$$

$$\frac{(2)(2)(2)}{(2)(2)(5)} =$$

$$\frac{\cancel{(2)}(\cancel{2})(2)}{\cancel{(2)}(\cancel{2})(5)} =$$

$$\frac{2}{5} =$$

Prime 2, 3, 5, 7, 11, 13...

$\begin{array}{r} 2 \overline{)8} \\ 2 \overline{)4} \\ 2 \overline{)2} \\ \hline 1 \end{array}$	$\begin{array}{r} 2 \overline{)20} \\ 2 \overline{)10} \\ 5 \overline{)5} \\ \hline 1 \end{array}$
--	--

4

$y = 8.50x$ find y if $x = 40$

$$y = 8.50(40)$$

$$y = 340.00$$

2	
8.50	
x 40	
000	
3400	
340.00	

5. $y = 0.92x$ find y if $x = 400$

$$y = 0.92(400)$$

$$y = 368$$

$$\begin{array}{r} .92 \\ \times 400 \\ \hline 00 \\ 00 \\ 368 \\ \hline 368.00 \end{array}$$

6. $-2x + 260 \leq 160$

$$-2x + \cancel{260} - \cancel{260} \leq 160 - 260$$

$$-2x \leq -100$$

$$\frac{-2x}{-2} \geq \frac{-100}{-2}$$

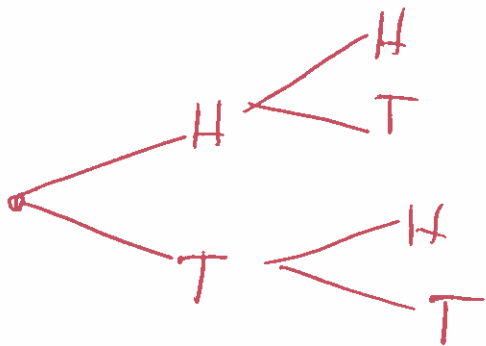
$$x \geq 50$$



$$[50, \infty)$$

Divide by a negative and turn alligator around

7. Toss a coin two times and show the tree diagram.



8.

$$\frac{2}{3} = \frac{N}{21}$$

$$2(21) = 3(N) \quad \text{cross mult}$$

$$42 = 3N$$

$$\frac{42}{3} = \frac{3N}{3}$$

$$14 = N$$

$$\begin{array}{r} 14 \\ 3 \overline{) 42} \\ \underline{-(3)} \\ 12 \\ \underline{-(12)} \\ 0 \text{ rem} \end{array}$$

9) $V = \frac{1}{2} B H m$, find V if
 $B=12, H=10, m=44$

$$V = \frac{1}{2} (12)(10)(44)$$

$$V = \frac{1}{2} (120)(44)$$

$$V = \frac{1}{2} (5280)$$

$$\begin{array}{r} 12 \\ \times 10 \\ \hline 00 \\ 12 \\ \hline 120 \end{array}$$

$$\begin{array}{r} 120 \\ \times 44 \\ \hline 480 \\ 1480 \\ \hline 5280 \end{array}$$

$$V = \frac{5280}{2}$$

$$\begin{array}{r} 2640 \\ 2 \overline{) 5280} \\ \underline{-(4)} \\ 12 \\ \underline{-(12)} \\ 8 \\ \underline{-(8)} \\ 0 \\ \underline{-(0)} \\ 0 \end{array}$$

$V = 2640$

10) $y = 2x$ graph

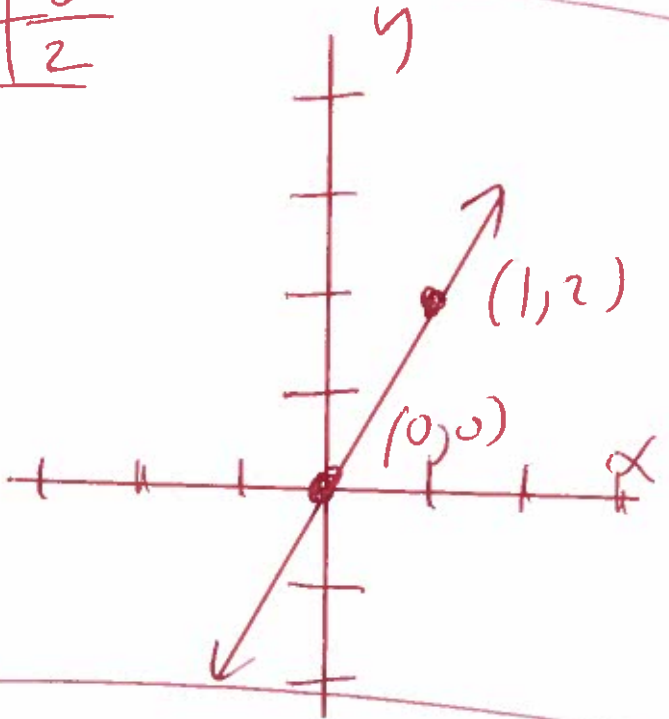
$$y = 2(0)$$

$y = 0$

$$y = 2(1)$$

$y = 2$

x	y
0	0
1	2



11. $y = -2x + 8$ graph

$$y = -2(0) + 8$$

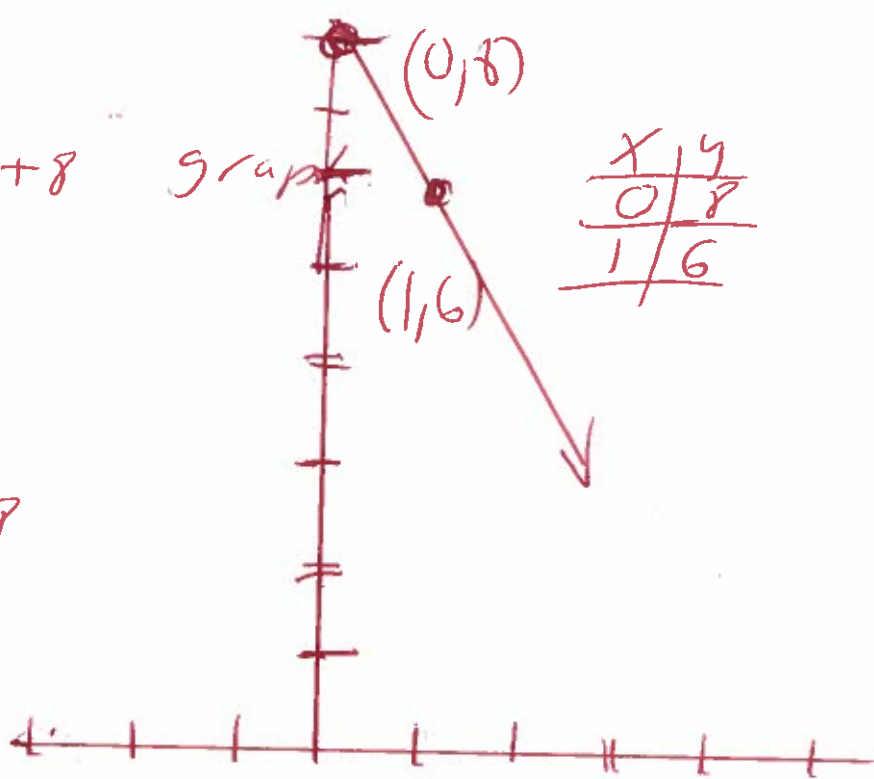
$$y = 0 + 8$$

$$y = 8$$

$$y = -2(1) + 8$$

$$y = -2 + 8$$

$$y = 6$$



12. $(5x + 10) + 70 = 90$

$$5x + 10 + 70 = 90$$

$$5x + 80 = 90$$

$$5x + \cancel{80} - \cancel{80} = 90 - 80$$

$$5x = 10$$

$$\frac{5x}{5} = \frac{10}{5}$$

$$x = 2$$

13. $A = \frac{1}{2}BH$, find A if $B=12$, $H=8$

$$A = \frac{1}{2}(12)(8)$$

$$A = \frac{1}{2}(96)$$

$$A = \frac{96}{2}$$

$$A = 48$$

$$\begin{array}{r} 12 \\ \times 8 \\ \hline 96 \\ \\ 2 \overline{)96} \\ \underline{-(8)} \\ 16 \\ \underline{-(16)} \\ 0 \end{array}$$

14. $A = LW$ find A if

$$L = 9.5, W = 9.5$$

$$A = (9.5)(9.5)$$

$$A = 90.25$$

$$\begin{array}{r} 4 \\ 2 \\ 9.5 \\ \times 9.5 \\ \hline 475 \\ 855 \\ \hline 90.25 \end{array}$$

15. Similar Rectangles



$$\frac{200}{20} = \frac{N}{4}$$

$200(4) = 20(N)$ cross mult

$$800 = 20N$$

$$\frac{800}{20} = \frac{20N}{20}$$

$$40 = N$$

$$\begin{array}{r} 40 \\ 20 \overline{) 800} \\ \underline{-(80)} \\ 0 \\ 0 \\ \hline 0 \end{array}$$

16. $1200 - \frac{1}{5}(1200) - \frac{1}{3}(1200) - \frac{3}{10}(1200) =$

$$1200 - \frac{1200}{5} - \frac{1200}{3} - \frac{3(1200)}{10} =$$

$$1200 - \frac{1200}{5} - \frac{1200}{3} - \frac{3600}{10} =$$

$$1200 - 240 - 400 - 360 =$$

$$960 - 400 - 360 =$$

$$560 - 360 =$$

$$200 =$$

17.

$$4x + 1 > 6x + 21$$

$$4x + 1 - 1 > 6x + 21 - 1$$

$$4x > 6x + 20$$

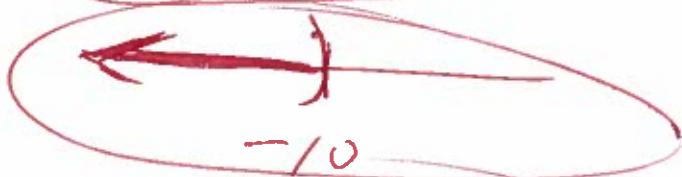
$$4x - 6x > 6x + 20 - 6x$$

$$-2x > 20$$

$$\frac{-2x}{-2} < \frac{20}{-2}$$

Divide by a negative
and turn all signs
around

$$x < -10$$



$$(-\infty, -10)$$

18.

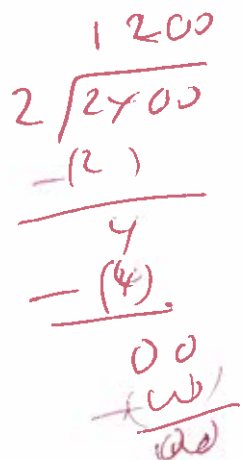
$$\frac{2}{300} = \frac{8}{N}$$

$$2(N) = 300(8)$$

$$2N = 2400$$

$$\frac{2N}{2} = \frac{2400}{2}$$

$$N = 1200$$



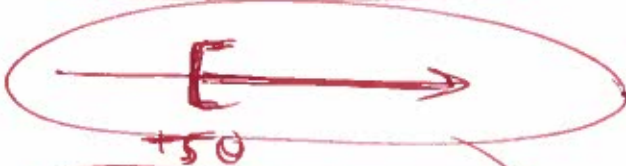
$$19. \quad -2.2N + 260.55 \leq 150.55$$

$$-2.2N + 260.55 - 260.55 \leq 150.55 - 260.55$$

$$-2.2N \leq -110$$

$$\frac{-2.2N}{-2.2} \geq \frac{-110}{-2.2}$$

$$N \geq +50$$



$$[+50, \infty)$$

Divide by a negative
and turn the
inequality around

$$\begin{array}{r} 50 \\ 2.2 \overline{) 1100} \\ \underline{110} \\ 0 \\ \underline{0} \\ 0 \end{array}$$

$$20. \quad \frac{24}{25} = \frac{N}{200}$$

$$24(200) = 25(N) \quad \text{cross mult}$$

$$4800 = 25N$$

$$\frac{4800}{25} = \frac{25N}{25}$$

$$192 = N$$

$$\begin{array}{r} 192 \\ 25 \overline{) 4800} \\ \underline{-(25)} \\ 230 \\ \underline{-(225)} \\ 50 \\ \underline{-(50)} \\ 0 \\ \text{rem} \end{array}$$

$$\textcircled{21} \quad \frac{2}{50} = \frac{N}{200}$$

$$2(200) = 50(N) \quad \text{cross mult}$$

$$400 = 50N$$

$$\frac{400}{50} = \frac{50N}{50}$$

$$\begin{array}{r} 8 \\ 50 \overline{) 400} \\ \underline{-(400)} \\ 0 \text{ rem} \end{array}$$

$$\textcircled{8 = N}$$

$$\textcircled{22} \quad T = PR, \quad \text{find } T \text{ if } P = \overset{\$}{29000} \\ R = 8\%$$

$$T = (\overset{\$}{29000})(8\%)$$

$$T = (29000)(.08)$$

$$\textcircled{T = 2320}$$

$$\begin{array}{r} 7 \\ 29000 \\ \times .08 \\ \hline 232000 \\ 00000 \\ \hline 2320.00 \end{array}$$

23. $A = \pi r^2$ Find A if $\pi = 3.14$, $r = 40$

$$A = 3.14 (40)^2$$

$$A = 3.14 (40)(40)$$

$$A = 3.14 (1600)$$

$$A = 5024$$

$$\begin{array}{r} 40 \\ \times 40 \\ \hline 00 \\ 1600 \\ \hline 1600 \end{array} \quad \begin{array}{r} 3.14 \\ \times 1600 \\ \hline 11000 \\ 1884 \\ 314 \\ \hline 5024.00 \end{array}$$

24. $y = -2x - 4$ graph

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

$$y = 0 - 4$$

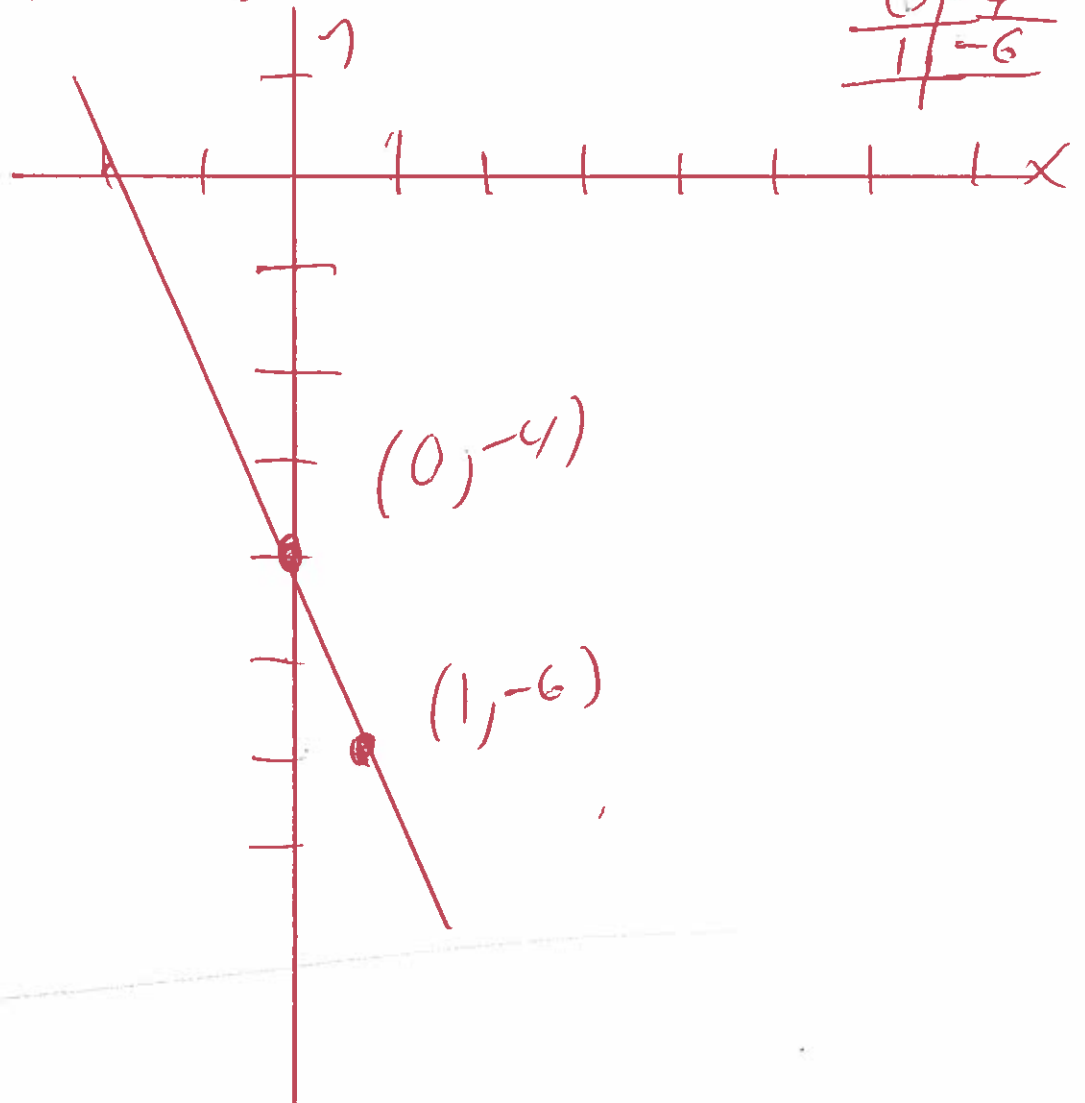
$$y = -4$$

$$y = -2(1) - 4$$

$$y = -2 - 4$$

$$y = -6$$

x	y
0	-4
1	-6



$$(25) \frac{1+2+5}{1+2+3+3+5+6} =$$

$$\frac{8}{20} =$$

$$\frac{(2)(2)(2)}{(2)(2)(5)} =$$

$$\frac{(2)(2)(2)}{(2)(2)(5)} =$$

$$\frac{(2)(2)(2)}{(2)(2)(5)} =$$

$$\frac{2}{5} =$$

Primes 2, 3, 5, 7, 11, 13, ...

$$2 \overline{) 8} \quad 2 \overline{) 20}$$

$$2 \overline{) 4} \quad 2 \overline{) 10}$$

$$2 \overline{) 2} \quad 5 \overline{) 5}$$

$$1 \quad 8 = 2 \cdot 2 \cdot 2$$

$$20 = 2 \cdot 2 \cdot 5$$

$$(26) A = PR \quad \text{find } A \quad P = 1200, \quad R = 90\%$$

$$A = (1200)(90\%)$$

$$A = (1200)(.90)$$

$$A = 1080$$

$$\begin{array}{r} 1200 \\ \times .90 \\ \hline 0000 \\ 10800 \\ \hline 1070.00 \end{array}$$

27 $C = \pi D$ find π if $C = 37.68, D = 12$

$$37.68 = \pi(12)$$

$$37.68 = 12\pi$$

$$37.68 = \frac{12\pi}{12}$$

12

$$3.14 = \pi$$

$$\begin{array}{r} 3.14 \\ 12 \overline{) 37.68} \\ \underline{-(36)} \\ 16 \\ \underline{-(12)} \\ 48 \\ \underline{-(48)} \\ 0 \text{ rem} \end{array}$$

28 $X + X + X + 2 + 2 = 50 + 10 + 2 + 2$
 $1X + 1X + 1X + 2 + 2 = 50 + 10 + 2 + 2$

$$3X + 4 = 64$$

$$3X + 4 - 4 = 64 - 4$$

$$3X = 60$$

$$\frac{3X}{3} = \frac{60}{3}$$

$$X = 20$$

$$\begin{array}{r} 20 \\ 3 \overline{) 60} \\ \underline{-(6)} \\ 0 \\ \underline{-(0)} \\ 0 \text{ rem} \end{array}$$

29

$$90,000 = N + 40,000 + 30,000 - 10,000 + 20,000$$

$$90,000 = N + 70,000 - 10,000 + 20,000$$

$$90,000 = N + 60,000 + 20,000$$

$$90,000 = N + 80,000$$

$$90,000 - 80,000 = N + \cancel{80,000} - \cancel{80,000}$$

$$10,000 = N$$

30 $(-8)(-32.2) =$

$$257.6 =$$

$$\begin{array}{r} 32.2 \\ \times 8 \\ \hline 257.6 \end{array}$$

31

$$(-8)(4.4) =$$

$$-35.2 =$$

$$\begin{array}{r} 3 \\ 4.4 \\ \times 8 \\ \hline 35.2 \end{array}$$

32

$$240 \leq 12N + 24$$

$$240 - 24 \leq 12N + \cancel{24} - \cancel{24}$$

$$216 \leq 12N$$

$$\frac{216}{12} \leq \frac{12N}{12}$$

$$18 \leq N$$

OR

$$N \geq 18$$

OR



OR

$$[18, \infty)$$

$$\begin{array}{r} 12 \\ \times 8 \\ \hline 96 \end{array}$$

$$\begin{array}{r} 18 \\ 12 \overline{) 216} \\ \underline{12} \\ 96 \\ \underline{-(96)} \\ 0 \text{ rem} \end{array}$$

$$(33) \quad 50 - 3N = 20.03$$

$$\cancel{50} - 3N - \cancel{50} = 20.03 - 50$$

$$-3N = -29.97$$

$$\frac{-3N}{-3} = \frac{-29.97}{-3}$$

$$N = 9.99$$

$$\begin{array}{r} 9.99 \\ 3 \overline{) 29.97} \\ \underline{-(21)} \\ 29 \\ \underline{-(27)} \\ 27 \\ \underline{-(27)} \\ 0 \end{array}$$

$$(34) \quad P = C^2 - \frac{1}{2}\pi r^2, \quad C = 12, \pi = 3.14, r = 6$$

$$P = (12)^2 - \frac{1}{2}(3.14)(6)^2$$

$$P = (12)(12) - \frac{1}{2}(3.14)(6)(6)$$

$$P = 144 - \frac{1}{2}(3.14)(36)$$

$$P = 144 - \frac{1}{2}(113.04)$$

$$P = 144 - \frac{113.04}{2}$$

$$P = 144 - 56.52$$

$$P = 87.48$$

$$\begin{array}{r} 3.14 \\ \times 36 \\ \hline 1884 \\ 942 \\ \hline 113.04 \end{array}$$

$$\begin{array}{r} 56.52 \\ 2 \overline{) 113.04} \\ \underline{-(10)} \\ 13 \\ \underline{-(12)} \\ 10 \\ \underline{-(10)} \\ 0 \end{array}$$

$$\begin{array}{r} 4 \\ \underline{-(4)} \\ 0 \end{array}$$

$$\textcircled{35} \quad V = \frac{1}{3} r^2 H, \quad r=6, \quad H=10$$

$$V = \frac{1}{3} (6)^2 (10)$$

$$V = \frac{1}{3} (6)(6)(10)$$

$$V = \frac{1}{3} (36)(10)$$

$$V = \frac{1}{3} (360)$$

$$V = \frac{360}{3}$$

$$\textcircled{V = 120}$$

$$\begin{array}{r} 120 \\ 3 \overline{) 360} \\ \underline{-(3)} \\ 6 \\ \underline{-(6)} \\ 0 \\ \underline{-(0)} \\ 0 \end{array}$$

$$\textcircled{36} \quad A = \frac{1}{2} (B+C) H, \quad B=10, \quad C=12, \quad H=4$$

$$A = \frac{1}{2} (10+12)(4)$$

$$A = \frac{1}{2} (22)(4)$$

$$A = \frac{1}{2} (88)$$

$$A = \frac{88}{2}$$

$$\textcircled{A = 44}$$

$$\begin{array}{r} 10 \\ + 12 \\ \hline 22 \end{array} \quad \begin{array}{r} 44 \\ 2 \overline{) 88} \\ \underline{-(8)} \\ 8 \\ \underline{-(8)} \\ 0 \text{ rem} \end{array} \quad \begin{array}{r} 22 \\ \times 4 \\ \hline 88 \end{array}$$

$$(37) \quad 3N - 10 = -40$$

$$3N - \cancel{10} + \cancel{10} = -40 + 10$$

$$3N = -30$$

$$\frac{3N}{3} = \frac{-30}{3}$$

$$N = -10$$

$$\begin{array}{r} 10 \\ 3 \overline{) 30} \\ \underline{-(30)} \\ 0 \end{array}$$

$$(38) \quad -93 + 4N = 7$$

$$-\cancel{93} + 4N + \cancel{93} = 7 + 93$$

$$4N = 100$$

$$\frac{4N}{4} = \frac{100}{4}$$

$$N = 25$$

$$\begin{array}{r} 25 \\ 4 \overline{) 100} \\ \underline{-(40)} \\ 60 \\ \underline{-(40)} \\ 20 \\ \underline{-(20)} \\ 0 \end{array}$$

39.

$$\frac{N}{2} + 19 = 12$$

$$\frac{N}{2} + \cancel{19} - \cancel{19} = 12 - 19$$

$$\frac{N}{2} = -7$$

$$\frac{N}{2} = \frac{-7}{1}$$

$$1(N) = 2(-7) \text{ cross mult}$$

$$1N = -14$$

$$N = -14$$

40.

$$\frac{N}{3} + 2.7 = 5.9$$

$$\frac{N}{3} + \cancel{2.7} - \cancel{2.7} = 5.9 - 2.7$$

$$\frac{N}{3} = 3.2$$

$$\frac{N}{3} = \frac{3.2}{1}$$

$$1(N) = 3(3.2) \text{ cross mult}$$

$$1N = 9.6$$

$$N = 9.6$$

$$\begin{array}{r} 5.9 \\ -2.7 \\ \hline 3.2 \end{array}$$

$$\begin{array}{r} 3.2 \\ \times 3 \\ \hline 9.6 \end{array}$$

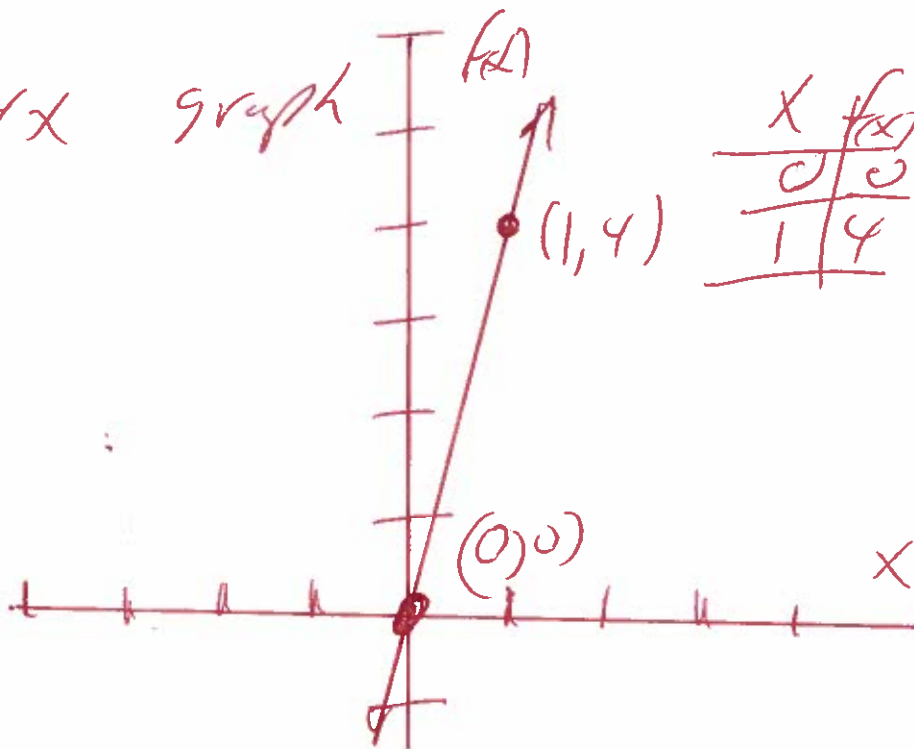
(41) $f(x) = 4x$ graph

$$f(0) = 4(0)$$

$$f(0) = 0$$

$$f(1) = 4(1)$$

$$f(1) = 4$$



(42) $f(x) = -2x + 6$ graph

$$f(0) = -2(0) + 6$$

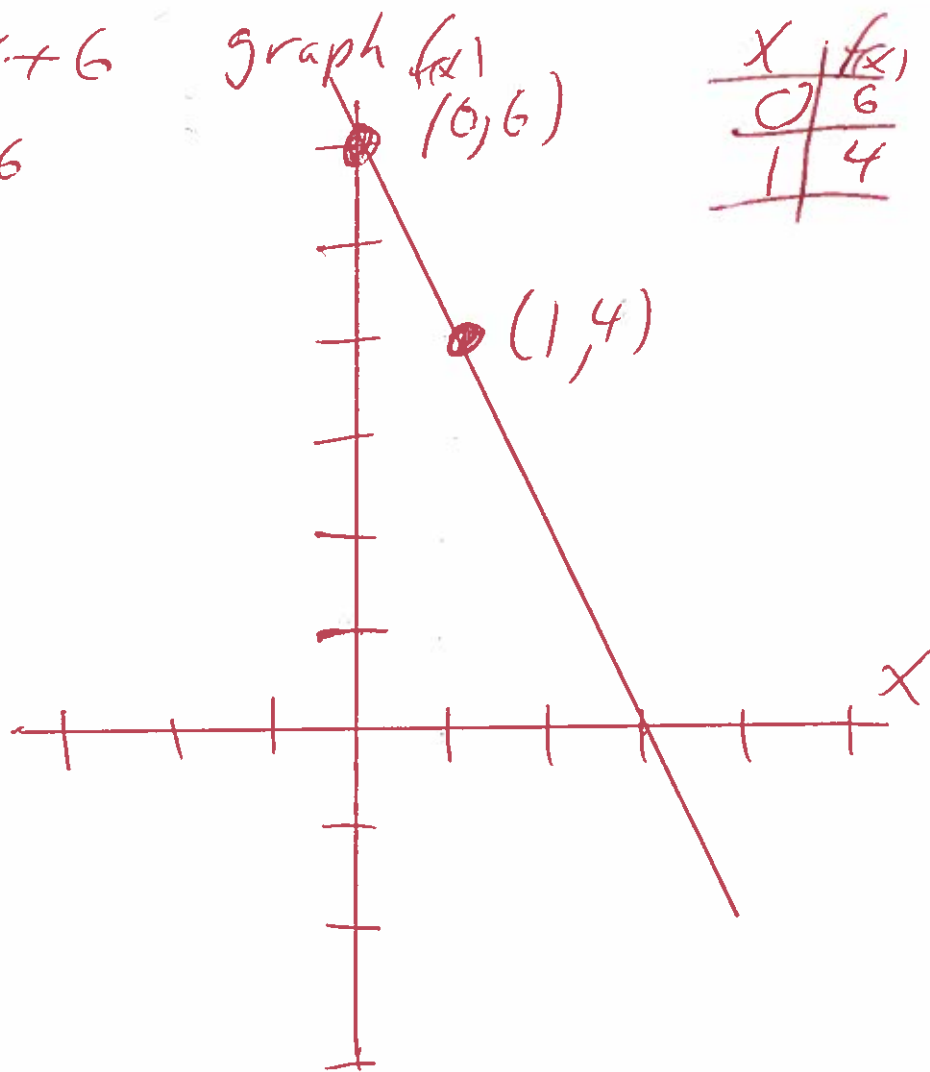
$$f(0) = 0 + 6$$

$$f(0) = 6$$

$$f(1) = -2(1) + 6$$

$$f(1) = -2 + 6$$

$$f(1) = 4$$



43

{1, 1, 2, 2, 2, 4, 4, 5, 5, 5, 5, 6, 6}

Find Mode

Mode is {5}

44

$f(x) = x^2 - 1$ find $f(-4)$

$$f(-4) = (-4)^2 - 1$$

$$f(-4) = (-4)(-4) - 1$$

$$f(-4) = 16 - 1$$

$$f(-4) = 15$$

(45) $f(x) = (x-1)(x-3)$ find $f(2)$

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

$$f(2) = (1)(-1)$$

$$f(2) = -1$$

(46) $f(x) = x^2 - 3x - 1$ find $f(-4)$

$$f(-4) = (-4)^2 - 3(-4) - 1$$

$$f(-4) = (-4)(-4) - 3(-4) - 1$$

$$f(-4) = 16 + 12 - 1$$

$$f(-4) = 28 - 1$$

$$f(-4) = 27$$

47.

Jar of Jelly Beans

Color of Jelly Beans	Frequency
RED	18
Green	26
Blue	21
Purple	20
Orange	15

What is the probability of choosing a Red or Green Jelly Bean at random?

Red or Green

Red + Green + Blue + Purple + Orange

$$18 + 26$$

$$18 + 26 + 21 + 20 + 15$$

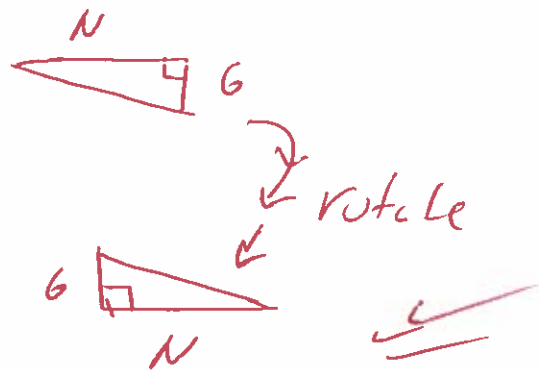
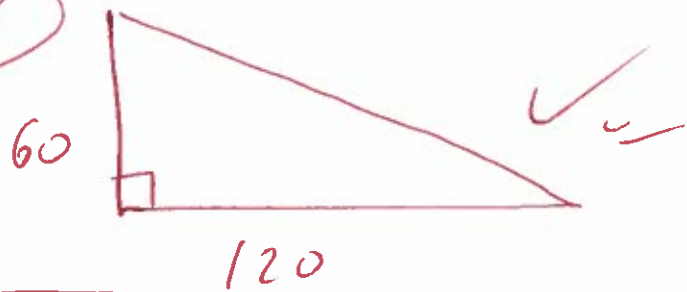
$$44$$

$$100$$

$$\frac{44(11)}{4(25)} =$$

$$\frac{11}{25} =$$

48



Similar Triangles

$$\frac{60}{120} = \frac{6}{N}$$

$60(N) = 120(6)$ cross mult

$$60N = 720$$

$$\frac{60N}{60} = \frac{720}{60}$$

$$N = 12$$

49

$$2.25x + 100 = 2.20x + 600$$

$$2.25x + 100 - 100 = 2.20x + 600 - 100$$

$$2.25x = 2.20x + 500$$

$$2.25x - 2.20x = 2.20x + 500 - 2.20x$$

$$.05x = 500$$

$$\frac{.05x}{.05} = \frac{500}{.05}$$

$$\begin{array}{r} 10000. \\ .05 \overline{) 50000.} \\ \underline{-(5)} \\ 000 \\ \underline{000} \\ 0 \end{array}$$

$$x = 10,000$$