

1. \$5 / ticket $\rightarrow \$5 \times 120 = \$600$

\$1 / Additional Pretzel $\rightarrow \$1 \times 36 = \$36$

\$1.50 / Additional Soda $\rightarrow$

120 tickets sold

36 Additional Pretzels sold

\$702.00 collected in total

of Additional Sodas sold?

$$\begin{array}{r} \$600 \\ + \$36 \\ \hline \$636 \end{array} \quad \begin{array}{r} \$702 \\ - \$636 \\ \hline \$66 \end{array}$$

$$\$66 \div \$1.50 = 44 \text{ SODAS}$$

(PRICE OF SODA)

2. Rushing offense = 1028 yards

Total offense = 3579 yards

Passive offense = ?

$$\text{Passive offense} = \text{Total offense} - \text{Rushing offense}$$

$$\text{Passive offense} = 3579 \text{ yards} - 1028 \text{ yards}$$

$$\text{Passive offense} = 2551 \text{ yards}$$

3. 7-Day week

24 hours = 1 day

60 minutes = 1 hour

How many times as long

as 60 minutes?

$$7 \text{ days} \times \frac{24 \text{ hours}}{1 \text{ day}} = 168 \text{ hours}$$

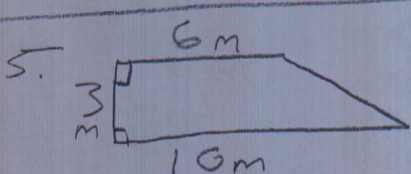
$$168 \text{ hours} \times \frac{60 \text{ minutes}}{1 \text{ hour}} = 10080 \text{ minutes}$$

$$\frac{10080 \text{ minutes}}{60 \text{ minutes}} = 168 \text{ times as long}$$

1. f DOLLARS per hour For h hours + g DOLLARS per hour For $3h$ hours

$$\frac{f \text{ DOLLARS}}{\text{hour}} \cdot h \text{ hours} + \frac{g \text{ DOLLARS}}{\text{hour}} \cdot 3h \text{ hours}$$

$$f \cdot h \text{ DOLLARS} + g \cdot 3h \text{ DOLLARS} = \boxed{fh + 3gh \text{ DOLLARS}}$$



$$A = h \cdot \frac{b_1 + b_2}{2}$$

$$A = 3 \cdot \frac{10 + 6}{2}$$

$$\begin{aligned} 3 &= h \\ 10 &= b_1 \\ 6 &= b_2 \end{aligned}$$

$$A = 3 \cdot \frac{16}{2}$$

$$A = 3 \cdot 8$$

$$A = \boxed{24 \text{ m}^2}$$

6. $\text{Average} = \frac{20 + 40 + 35 + 25}{4} = \frac{120}{4}$
(4 DAYS)

$\text{Average} = 30$
(4 DAYS)

We want: $\text{Average} = \text{Average}$
(4 DAYS) (5 DAYS)

$$130 = \frac{20 + 40 + 35 + 25 + X}{5}$$

$$5 \cdot 30 = \frac{120 + X}{5}$$

$$150 = 120 + X$$

$$-120 \quad -120$$

$$\boxed{30 = X}$$

$$7. h = 50t - 16t^2$$

Find h when $t = 2$

$$h = 50(2) - 16(2)^2$$

$$h = 100 - 16 \cdot 4$$

$$h = 100 - 64$$

$$h = \boxed{36 \text{ ft}}$$

8. Greatest Range = Greatest Difference of High and Low

$$\text{Range}_M = 30 - 12 = 18^\circ\text{F}$$

$$\text{Range}_T = 32 - 14 = 18^\circ\text{F}$$

$$\text{Range}_W = 29 - 10 = 19^\circ\text{F}$$

$$\text{Range}_H = 25 - 8 = 17^\circ\text{F}$$

$$\text{Range}_F = 28 - 16 = 12^\circ\text{F}$$

Pick the Biggest

Answer:

Wednesday

9. \$200 total

Peter earned 37% of total

Paul earned \$16

Fraction of total Mary earned?

$$\text{Peter} = 200 \times .37$$

$$\text{Peter} = \$74$$

$$\text{Paul} = \$16$$

$$\text{Mary} = 200 - \text{Peter} - \text{Paul}$$

$$\text{Mary} = 200 - 74 - 16$$

$$\text{Mary} = \$110$$

Mary earned \$110 out of the \$200 total

$$\frac{110}{200} = \boxed{\frac{11}{20}}$$

10. $F(x) = 2x + 10$

First evaluate $g(-3)$

$g(x) = 3x^2$

$g(-3) = 3(-3)^2$

$g(-3) = 3 \cdot 9$

$F(g(-3)) = ?$

Plug in for x in $F(x)$

$F(27) = 2(27) + 10$

$F(27) = 54 + 10$

$F(27) = 64$

11. 23

Count the squares

12. 4 inches rise for 12 inches of horizontal run

$F(x) = \frac{4}{12}x = \frac{1}{3}x$

Slope = $\frac{\text{Rise}}{\text{Run}}$

↑
Total
Rise
Total
Horizontal
Run

$30\frac{1}{2} = \frac{61}{2}$

given total
rise

3. $\frac{61}{2} = \frac{1}{3}x$ Solve for total
run (x).

$\frac{183}{2} = x$
 $x = 91\frac{1}{2}$

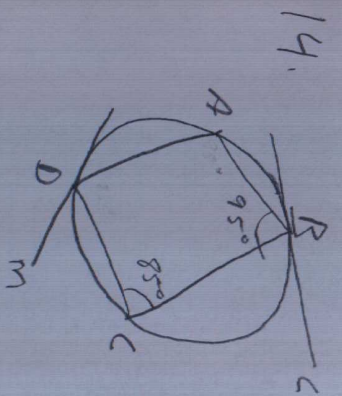
13. $a = 4$ $b = -2$

Plug the numbers in

$(2a - b) + b^a = ?$

$(2(4) - (-2)) + (-2)^4 = (8 + 2) + 16 = 10 + 16 =$

26



$$95^\circ + 85^\circ = 180^\circ$$

Consecutive Interior Angles
are supplementary.
Therefore $\overleftrightarrow{AB}$ and $\overleftrightarrow{DC}$ are
Parallel.

15. 112 gallons for \$2.10 each

Price increases by \$0.03

For each price increase of \$0.03, two fewer
gallons are sold

$$(2.10 + 0.03x)(112 - 2x)$$

Total money = Price $\times$ X
Units sold

Price
Increase
(Price $\times$ units sold)

Decrease in
items sold

16. $x^2 + 5x - 6$

Factor:

$$(x-1)(x+6)$$

ADD to be 5 and
multiply to be -6

17. $a = 2$
 $b = 3$

$$\frac{ab}{25} + \frac{11}{10(a+b)} + \frac{1}{(a+b)} = ?$$

Find LCD

$$\text{LCD} = 50$$

Plug in the numbers:

$$\begin{aligned} & \frac{(2)(3)}{25} + \frac{11}{10(2+3)} + \frac{1}{(2+3)} \\ &= \frac{6}{25} + \frac{11}{10(5)} + \frac{1}{5} \\ &= \frac{6}{25} + \frac{11}{50} + \frac{1}{5} \\ &= \frac{6 \cdot 2}{25 \cdot 2} + \frac{11}{50} + \frac{1 \cdot 10}{5 \cdot 10} \\ &= \frac{12}{50} + \frac{11}{50} + \frac{10}{50} = \boxed{\frac{33}{50}} \end{aligned}$$

18. Find the hour whose digits are the largest value when multiplied

$$9:??$$

Find largest number for the tens place for time: 5
 Find largest number for the ones place for time: 9

$$9:59$$

$$9 \times 5 \times 9 = \boxed{405}$$

19. The difference of two integers is 4,

$$x - y = 4$$

The sum of the same 2 integers is 38.

$$x + y = 38$$

Solve for variables:

$$\begin{array}{r} x - y = 4 \\ + \quad x + y = 38 \\ \hline \end{array} \quad \begin{array}{l} \text{Combine} \end{array}$$

$$\frac{2x}{2} = \frac{42}{2}$$

$$x = 21$$

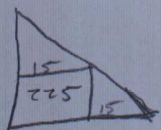
$$\begin{array}{r} 21 - y = 4 \\ +y \quad +y \\ \hline 21 = 4 + y \\ -4 \quad -4 \\ \hline y = 17 \end{array}$$

$x = 21$ Pick the bigger number.
 $y = 16$

$$\boxed{21}$$

Plug into an equation to solve

20.



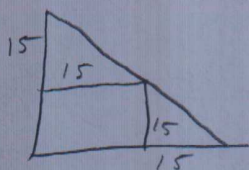
$$\text{Area of a square} = s^2$$

$$1 \text{ side of a square} = \sqrt{\text{Area}}$$

$$s = \sqrt{225}$$

$s = 15$ (length of a side of the square, also the length of the leg of each triangle)

Iso sceles triangles have two equal legs.



$$\text{Area of a triangle} = \frac{bh}{2}$$

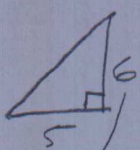
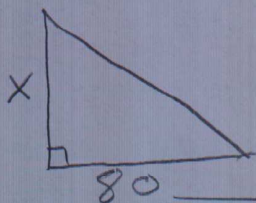
$$b = 15 \quad h = 15$$

Area of the two triangles:

$$A = \frac{15 \cdot 15}{2} + \frac{15 \cdot 15}{2} = 225 \text{ in}^2$$

↑ Area of 1st Triangle ↑ Area of 2nd Triangle

21.



Triangles are similar.

Find the ratio of the legs of the bigger triangle to the smaller triangle.

$$\frac{80}{5} = 16$$

Each leg of the bigger triangle is 16 times bigger than the corresponding leg of the smaller.

$$X = 16 \cdot 6$$

$$X = 96 \text{ Ft.}$$

22. Solve for X.

$$(x+5)^2 = (x+1)^2$$

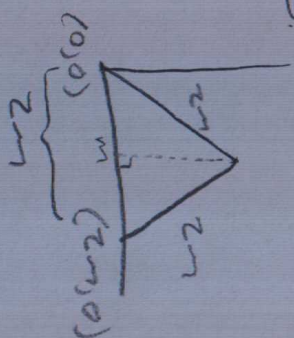
$$\text{FOIL: } x^2 + 10x + 25 = x^2 + 2x + 1$$

$$\text{Solve: } \begin{array}{r} x^2 + 10x + 25 = x^2 + 2x + 1 \\ -x^2 \quad -x^2 \\ 10x + 25 = 2x + 1 \\ -2x \quad -2x \\ 8x + 25 = 1 \\ -25 \quad -25 \\ 8x = -24 \end{array}$$

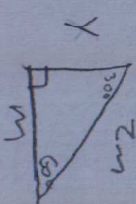
$$\frac{8x}{8} = \frac{-24}{8}$$

$$x = -3$$

23.



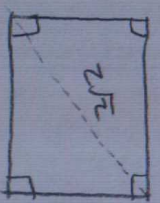
ALL SIDES ARE EQUAL
ALL SIDES EQUAL $2m$
MIDPOINT OF BASE IS $(m, 0)$
CUT INTO TWO EQUAL TRIANGLES DOWN THE MIDDLE



SOLVE FOR X USING A 30-60-90
RIGHT TRIANGLE.
 $X = m\sqrt{3}$

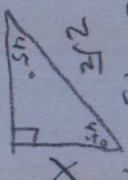
3RD VERTEX IS AT $(m, m\sqrt{3})$

24.



WITH THE DIAGONAL YOU CREATE TWO
45-45-90 TRIANGLES.

USE 45-45-90 TRIANGLE TO SOLVE FOR A SIDE



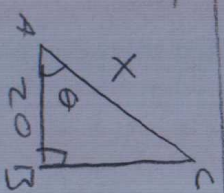
$$X = \frac{2\sqrt{2}}{\sqrt{2}} = z$$

SO WE HAVE A 2×2 SQUARE.

THE AREA OF A 2×2 SQUARE IS:

$$2 \times 2 = 4 \text{ in}^2$$

25.



COSINE IS THE ADJACENT SIDE DIVIDED BY
THE HYPOTENUSE.

$$\cos \theta = \frac{20}{X}$$

26.

THE ALGEBRA IS AWKWARD. PLUG IN YOUR CHOICES.

$$\sqrt{X} + \sqrt{X-16} = 8$$

$$\text{CHOICE H: } \sqrt{25} + \sqrt{25-16} \stackrel{?}{=} 8$$

27. 

S AND Q ARE MIDPOINTS SO

$\overline{PQ}$ and $\overline{VS}$ are 5 ($\frac{10}{2} = 5$)

P is a midpoint so $\overline{LP}$ and $\overline{PM} = 12$ ($\frac{24}{2} = 12$)

LQ AND MS = 5

Solve for QR or RS (they are equal)
 $= c^2$

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

$$5^2 + 12^2 = 13^2$$

$$25 + 144 = c^2$$

$$\sqrt{169} = \sqrt{13^2}$$

169 = 6
13 = 6 so $\overline{QR}$ and $\overline{RS} = 13$

ADD UP $\overline{PN}$, $\overline{PQ}$, $\overline{QR}$, $\overline{RS}$, AND $\overline{S}$.

$$\text{Perimeter} = 24 + 5 + 13 + 13 + 5 = 60 \text{ in}$$

28. Look in 1999 section

of males (millions) = 133.4

Total population (millions) = 272.9

$$\% \text{ of males} = \frac{\# \text{ of males}}{\text{total population}} \times 100\%$$

$$= \frac{133.4}{272.9} \times 100\%$$

$$\approx 149\%$$

29. Look at Westrow of column 1999

$$\text{West} = 22.4\% = .224$$

multiply by total angle in a circle.

$$224 \times 360^\circ \approx 81\%$$

30. Average rate of change = $\frac{1995 \text{ total} - 1990 \text{ total}}{\# \text{ of change in years}}$

$$\frac{262.8 - 248.8}{1995 - 1990} = \frac{14}{5} = \boxed{2.8}$$

31. $\frac{1}{D_0} + \frac{1}{D_i} = \frac{1}{f}$ Solve for f given $D_0 = 36$
 And $D_i = 12$

$$\frac{1}{36} + \frac{1}{12} = \frac{1}{f}$$

$$\frac{1}{36} + \frac{3}{36} = \frac{1}{f}$$

$$\frac{4}{36} = \frac{1}{f}$$

$$\rightarrow \frac{1}{9} = \frac{1}{f}$$

Cross multiply:

$$\frac{1}{9} \neq \frac{1}{f}$$

$$\boxed{f = 9}$$

Cross multiply or
 raise both sides
 to the -1 power.

Raise to -1 power:

$$\left(\frac{1}{9}\right)^{-1} = \left(\frac{1}{f}\right)^{-1}$$

(Flips the fractions)

$$\boxed{f = 9}$$

32. $\{2, 3, 4, 5, 6\}$

of primes in the set:

2, 3, 5 (3 elements)

Total # of elements in
 the set: 5

$$P_{\text{prime}} = \boxed{\frac{3}{5}}$$

33. $g(x, y) = 5x + 4y$

$$y = \left(\frac{3}{x}\right)^2$$

$$x = 2$$

Plug in the values

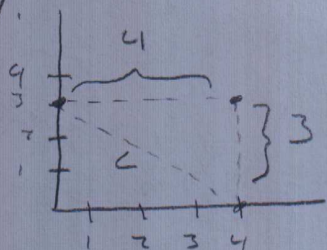
$$g\left(2, \left(\frac{3}{2}\right)^2\right) = 5(2) + 4\left(\frac{3}{2}\right)^2$$

$$= 10 + 4\left(\frac{9}{4}\right)$$

$$= 10 + 9$$

$$= \boxed{19}$$

34.



$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 4^2 + 3^2 &= c^2 \\
 16 + 9 &= c^2 \\
 \sqrt{25} &= \sqrt{c^2} \\
 c &= 5
 \end{aligned}$$

35. $\log_5 x = 2$

Solve For X:

- Switch to exponential Form

$$5^2 = x$$

$$x = 25$$

36. $y = 16 - 0.05x$

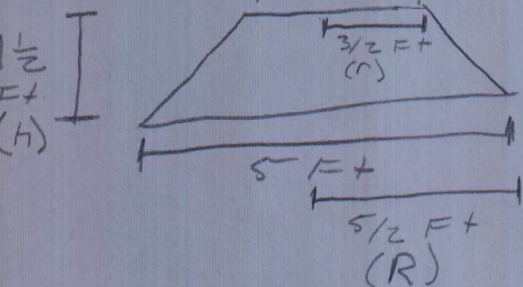
 $x = \# \text{ of miles}$

slope = -0.05

For every one mile

traveled, the car uses
0.05 gallons of gas

37. $V = \frac{1}{3} \pi h (R^2 + r^2 + Rr)$



$$V = \frac{1}{3} \pi \left(1\frac{1}{2}\right) \left(\left(\frac{5}{2}\right)^2 + \left(\frac{3}{2}\right)^2 + \left(\frac{5}{2} \cdot \frac{3}{2}\right)\right)$$

$$V = \frac{1}{3} \pi \left(\frac{3}{2}\right) \left(\frac{25}{4} + \frac{9}{4} + \frac{15}{4}\right)$$

$$V = \frac{3}{6} \pi \left(\frac{49}{4}\right)$$

$$V = \frac{1}{2} \pi \left(\frac{49}{4}\right)$$

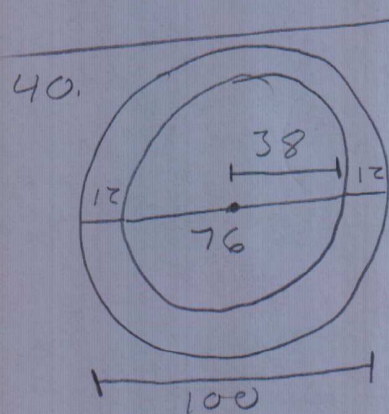
$$V = \frac{49}{8} \pi$$

$$V \approx 19 \text{ Ft}^3$$

38. $6x+10=2(3x+5)$ Solve For x :
 $6x+10=6x+10$ Distribute the 2

The equations are the same so
the solution set of all real numbers
because any real number plugged into
 x makes the equation true.

39. $\frac{\frac{1}{2}}{\frac{1}{2} + \frac{1}{3}} = \frac{\frac{1}{2}}{\frac{3}{6} + \frac{2}{6}} = \frac{\frac{1}{2}}{\frac{5}{6}} = \frac{\frac{1}{2} \cdot \frac{6}{5}}{\frac{13}{12}} = \frac{\frac{6}{10}}{\frac{13}{12}} = \frac{\frac{3}{5}}{\frac{13}{12}}$
Reduce Fraction
 $\frac{\frac{1}{2} + \frac{1}{3} + \frac{1}{4}}{\frac{6}{12} + \frac{4}{12} + \frac{3}{12}} = \frac{\frac{13}{12}}{\frac{13}{12}}$
Divide by 4
Fraction is the same as multiplying by its reciprocal.
 $= \frac{3}{5} \cdot \frac{12}{13} = \frac{36}{65}$



Area of a circle = πr^2 , $r=38$

$A = \pi \cdot 38^2$

$A = \pi \cdot 1444$

$A = 4536.460 m^2$

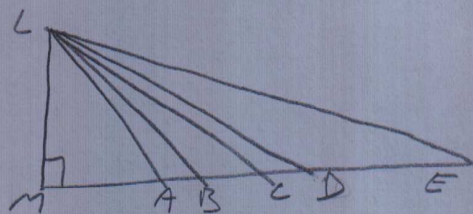
Pick the closest answer
to 4536.460.

$\boxed{14500}$

41. $x^0 + y^0 = ?$ Any nonzero real number raised
to the zero power is 1.

$x^0 + y^0 = 1 + 1 = \boxed{2}$

42.



Sine is opposite
hypotenuse

Look for the angle with
the largest hypotenuse
Since LM is the opposite
side for all of the angles.
 $\angle LEM$ has the largest
hypotenuse so sine is
smallest for $\angle LEM$.

43. Look for the point that hits
the y-axis.

Point P

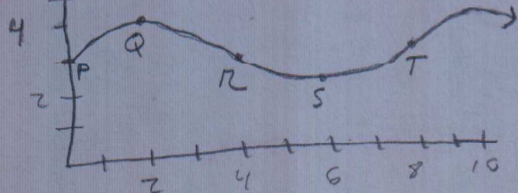
44. - The graph is not at a constant y value the whole
time.

- The graph is not a line or parabola

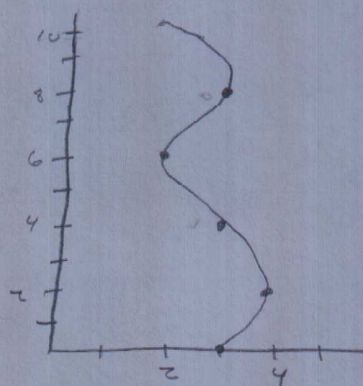
- The graph is not a cubic

- It looks like a sine graph - trigonometric

45. $y = f(x)$



Reflection of $y = f(x)$
across the line $y = x$
switches the
x and y values



P(0, 3)

S(6, 2)

new points:

Q(2, 4)

T(8, 3)

A(3, 0)

D(2, 6)

R(4, 3)

B(4, 2)

E(3, 8)

L(2, 1)

46. Factors of 35
1, 5, 7, 35

Factors of 16
1, 2, 4, 8, 16

Check choices: Multiply a factor of 35 by a factor of 16 to see if you can match the choices' answer.

Choice F: $1 \cdot 1 = 1$

(1)

Choice G: no combination

Choice H: $5 \cdot 8 = 40$

(40)

Choice J: $7 \cdot 16 = 112$

(112)

Choice K: $35 \cdot 16 = 560$

(560)

No product of factors gets you the choice G answer.

24

47. $\frac{12c}{3c} = \frac{(12)(10)(8)(6)(4)(2)}{(2)} = \frac{46080}{2} = \boxed{23040}$

48. b is a y coordinate.
Solve for b when $x=1$

$x - 3y = 7$ b is the y-value when $x=1$
 $1 - 3b = 7$
 $-1 \quad -1$

$-3b = 6$
 $\frac{-3}{-3} \quad \frac{6}{-3}$

$b = \boxed{-2}$

49. $x > 0$

$\frac{x^2 + x}{x} - x$

Simplify $\frac{x^2 + x}{x} - x$

Factor: $\frac{x(x+1)}{x} - x$

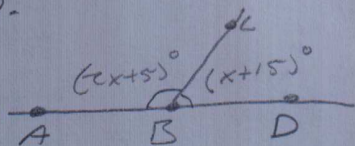
Cancel the x on top and bottom of the fraction:

$x+1-x$

The second x subtracts the first x and you are left with 1.

So for any $x > 0$ you get a value of 1, which is a constant.

50.



$$\angle ABC = 2x + 5$$

$$\angle ABC = 2\left(\frac{160}{3}\right) + 5$$

$$\angle ABC = \frac{320}{3} + 5$$

$$\angle ABC = 106\frac{2}{3} + 5$$

$$\angle ABC = \boxed{111\frac{2}{3}}$$

The angles add to be 180°

$$2x + 5 + (x + 15) = 180$$

Solve For x :

$$2x + 5 + x + 15 = 180 \quad \text{Combine like terms}$$

$$3x + 20 = 180$$

$$\frac{3x}{3} = \frac{160}{3}$$

$x = \frac{160}{3}$ Plug this value in for x of $2x + 5$ to find $\angle ABC$

51. $m(\text{slope}) = \frac{y_2 - y_1}{x_2 - x_1}$

$$\begin{matrix} (-1, -8) \\ x_1 \quad y_1 \end{matrix}$$

$$\begin{matrix} (0, 6) \\ x_2 \quad y_2 \end{matrix}$$

$$m = \frac{6 - (-8)}{0 - (-1)}$$

$$m = \frac{6 + 8}{0 + 1}$$

$$m = \frac{14}{1}$$

$$m = \boxed{14}$$

52. $\pi \text{ radians} = 180^\circ$

$$\frac{5\pi}{12} \cdot \frac{180^\circ}{\pi} = \frac{900}{12} = \boxed{75^\circ}$$

53. Standard equation of a circle: $(x-h)^2 + (y-k)^2 = r^2$ $r = \text{radius}$

Center: $(2, 6)$

Area = $4\pi \text{ units}^2$

Area of a circle: πr^2

Solve for r^2 given Area.

$$4\pi = \pi r^2 \quad \text{Set up equation}$$

$$\frac{4\pi}{\pi} = \frac{\pi r^2}{\pi} \quad \text{Divide by } \pi$$

$$r^2 = 4$$

With the center and r^2 , we find the equation of this circle to be:

$$\boxed{(x-2)^2 + (y-6)^2 = 4}$$

$h = x \text{ value of the center}$
 $k = y \text{ value of the center}$

54. Try to Derive each choice From $x(\frac{1}{y}) = 1$

Choice F: $x(\frac{1}{y}) = 1$ Take the inverse of both sides
 $(y(\frac{1}{x}) = 1)$ $x^{-1}(\frac{1}{y})^{-1} = 1^{-1}$
 $\frac{1}{x} \cdot y = 1$
 $y(\frac{1}{x}) = 1$

Choice G: $x(\frac{1}{y}) = 1$ multiply both sides by y
 $(x=y)$ $x(\frac{1}{y}) \cdot y = 1 \cdot y$
 $x = y$

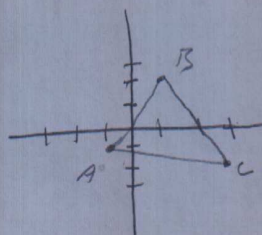
Choice H: $x=y$ we already showed that $x=y$
 $(x^2+y^2=2xy)$ $(x-y)^2 = 0^2$ - Subtract y from both sides
 And square both sides
 $x^2 - 2xy + y^2 = 0$ For C
 $x^2 + y^2 = 2xy$ move $2xy$ to the other side

Choice J: $x=y$ - we showed that $x=y$
 $(x^2=y^2)$ $x^2=y^2$ - Square both sides

Choice K: By process of elimination we know that
 $(x^5+y^5=1)$ $\boxed{x^5+y^5=1}$ is the correct answer.

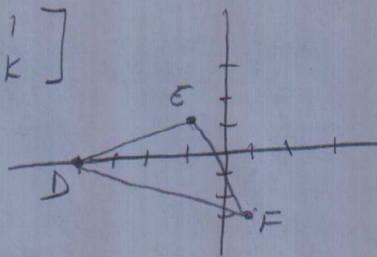
55. $\begin{bmatrix} -2 & 1 & 3 \\ 1 & 2 & -2 \end{bmatrix}$

A(-2, 1)
 B(1, 2)
 C(3, -2)



$\begin{bmatrix} -4 & -1 & 1 \\ 0 & 1 & k \end{bmatrix}$

D(-4, 0)
 E(-1, 1)
 F(1, k)

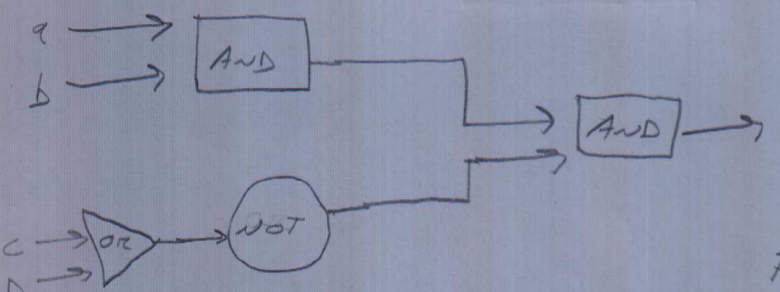


All x coordinates decreased by 2
 And all y coordinates decreased by 1
 (3, -2) corresponds with (1, k)

k is a y value so $k = -2 - 1$

$k = \boxed{-3}$

56.



Work backwards.

Both inputs to the last

AND must be 1.

For the output of the first **AND** to be 1,

both a and b must be 1.

For the output of **NOT** to be 1, its inputs must both be zero, so c and d must be 0.

(1, 1, 0, 0)

57. $b > 0$

$$|x+b| \geq 4$$

To solve for x in an absolute value, set what is inside of the absolute value equal to both the positive and negative number on the other side of the inequality and solve for x.

$$x+b = 4$$

$$x = 4-b$$

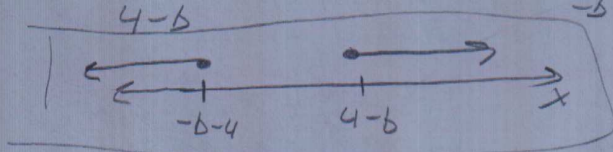
x must be $4-b$
or greater than
 $4-b$

$$x+b = -4$$

$$x = -4-b$$

$$x = -b-4$$

x must be $-b-4$ or less than
 $-b-4$



58. $(5.0 \times 10^{-7})(8.0 \times 10^{-4})$

Remember exponent rules

$$x^a \cdot x^b = x^{a+b}$$

$$10^{-7} \cdot 10^{-4} = 10^{-7-4}$$

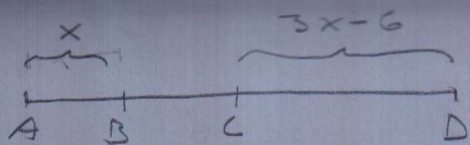
This is really: $5.0 \times 10^{-7} \times 8.0 \times 10^{-4}$
Rearranged: $5.0 \times 8.0 \times 10^{-7} \times 10^{-4}$

$$= 40.0 \times 10^{-7-4}$$

$$= \boxed{4.0 \times 10^{-7-4+1}}$$

ADD 1 to the exponent because we moved the decimal 1 space to the left to get

59.



$$\overline{AB} = x, \text{ so } \overline{BC} = x, \text{ so } \overline{AC} = 2x$$

$$\overline{AC} = \overline{CD}, \text{ so we have } 2x = 3x - 6$$

Now we solve for x : Since $\overline{AC} = \overline{CD}$, $\overline{AC} = 3x - 6$

$$\begin{array}{r} 2x = 3x - 6 \\ -3x \quad -3x \\ \hline \end{array}$$

$$\begin{array}{r} -x = -6 \\ \hline \end{array}$$

$$x = 6$$

$$\overline{AD} = \overline{AC} + \overline{CD}$$

$$\overline{AD} = 3x - 6 + (3x - 6)$$

$$\overline{AD} = 6x - 12$$

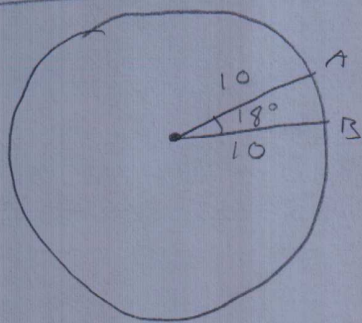
$$\overline{AD} = 6(6) - 12$$

$$\overline{AD} = 36 - 12$$

$$\overline{AD} = \boxed{24}$$

Plug in 6 for x

60.



Arclength $= r\theta$, where r is the length of the radius and θ is the central angle measure in radians.

- Convert 18° into radians
(Recall $180^\circ = \pi$ radians)

$$18^\circ \cdot \frac{\pi}{180^\circ} = \frac{18\pi}{180} = \frac{\pi}{10} \text{ radians}$$

We now have that $r = 10$ and $\theta = \frac{\pi}{10}$ radians.

Plug the values in the arclength formula.

$$\widehat{AB} = r\theta$$

$$\widehat{AB} = 10 \cdot \frac{\pi}{10}$$

$$\widehat{AB} = \frac{10\pi}{10}$$