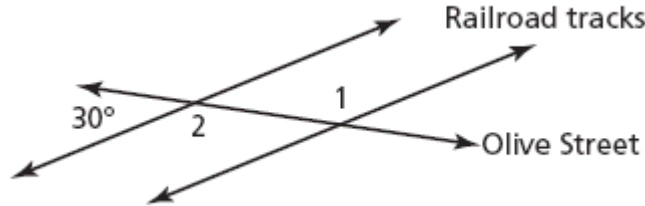


Scientific calculators were permitted for this booklet. All scrap work had to be done in booklet. You had to show work.

- 28) You were presented with the following diagram and asked for the measure of angle 1.



$p_2 = 150^\circ$ because it is supplementary to the 30° angle. The sum of the measures of supplementary angles is 180° .

p_2 and p_1 are alternate interior angles and are therefore congruent.

This means that p_1 measures 150° .

ANSWER: 150°

- 29) You are given the following coordinate axis showing two trapezoids. It plots JKLM and its transformation J'K'L'M'. You are asked to name the transformation that was used

Part A

ANSWER: Translation

Part B

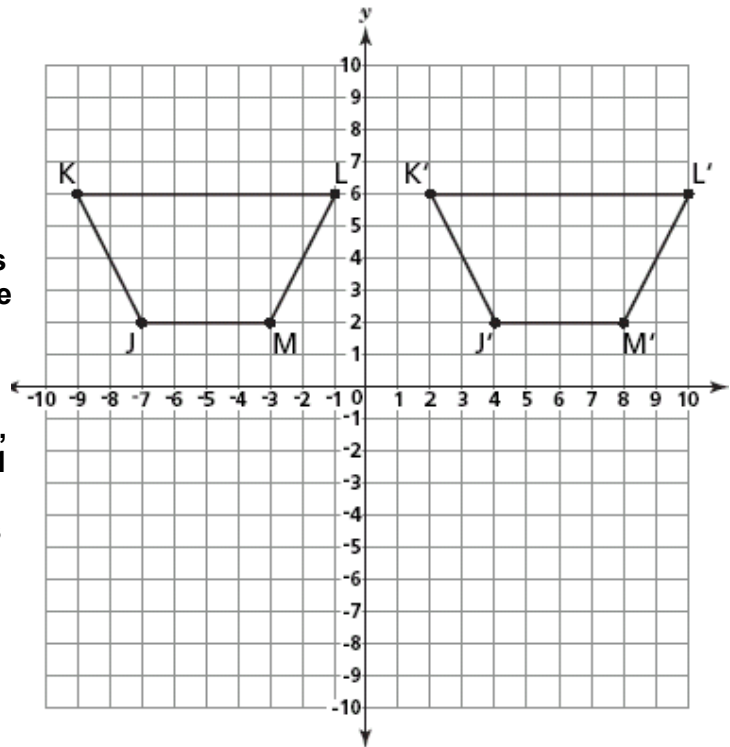
ANSWER:

I Counted the number of units from J to J' and saw that there were 11. To get from K to K', I again moved 11 units to the right.

From L to L' and from M to M', it is in each case a move of 11 units to the right.

This type of transformation is called a translation.

(The rule for this transformation would be $T_{0,11}$, This would mean that the x-coordinate of the transformed image would remain the same, but its y-coordinate would change by +11.



- 30) You are shown the figure at the right and told that the total length of its sides is 84 inches. You are asked to find the length of side BC.

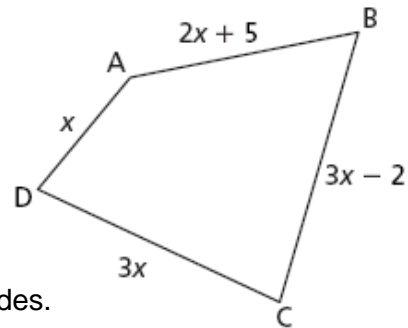
(Your plan is to set up an equation where you add all the sides and set the result equal to 84.)

$$\begin{aligned} x + 2x + 5 + 3x - 2 + 3x &= 84 && \text{Combine like terms.} \\ 9x + 3 &= 84 && \text{Subtract 3 from both sides.} \\ 9x &= 81 && \text{Divide both sides by 9.} \\ \mathbf{x} &= \mathbf{9} \end{aligned}$$

Once you know that $x = 9$, you can substitute this value in determining side BC.

$$\begin{aligned} \text{Side BC} &= 3x - 2 && \text{Substitute 9 for } x. \\ &= 3(9) - 2 \\ &= 27 - 2 \\ &= 25 \end{aligned}$$

ANSWER: Side BC is 25 inches.



- 31) The current highway toll is \$1.50 How much will it be after a 20% increase.?

One way to do this is to first find 20% of \$1.50. If your calculator has a % key, simply multiply \$1.50 by 20%. If not, change 20% to .20 and multiply by \$1.50.

In either case your answer will be .3 which means 30 cents. In other words there will be a 30 cent increase in toll. The current toll is \$1.50. After the increase it will be \$1.50 + .30 or \$1.80.

Another way of doing this problem and not having to do any addition is to right away multiply \$1.50 by 120% or 1.20.

ANSWER: \$1.80

32) Complete the table of values for the equation $y - 3x = 2$

x=-2
 $y-3(-2)=2$
 $y+6=2$
y = -4

x= -1
 $y-3(-1)=2$
 $y+3=2$
y=-1

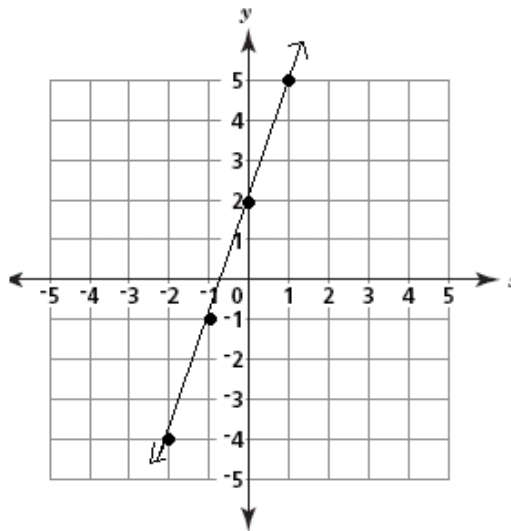
x=0
 $y-3(0)=2$
 $y-0=2$
y=2

x=1
 $y-3(1)=2$
 $y-3=2$
y=5

x	y
-2	
-1	
0	
1	

x	y
-2	-4
-1	-1
0	2
1	5

Next you are asked to graph the line for this equation on the coordinate plane. You are now plotting the x and y coordinates based on the table you completed above. The points are: (-2,-4), (-1,-1), (0,2), and (1,5).



33) You are asked to write the following sentence as an algebraic inequality.

Forty-eight is greater than or equal to four plus the product of a certain number, x , and eleven.

ANSWER: $48 \geq 4 + 11x$

(The product of a certain number, x , and eleven, translates as $11x$. Product is your answer to a multiplication problem.)

ANSWER: (C)