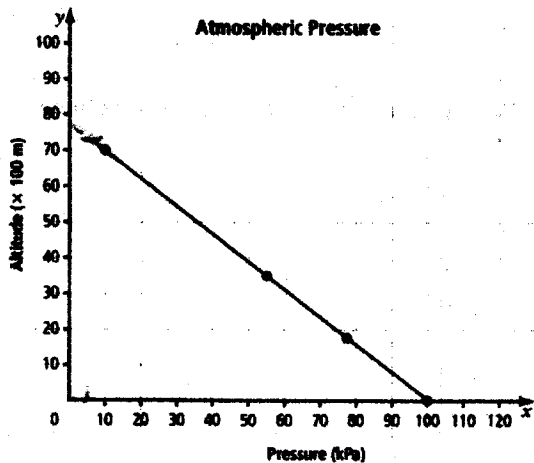


MATH 9 - CHAPTER 6 - PRETEST

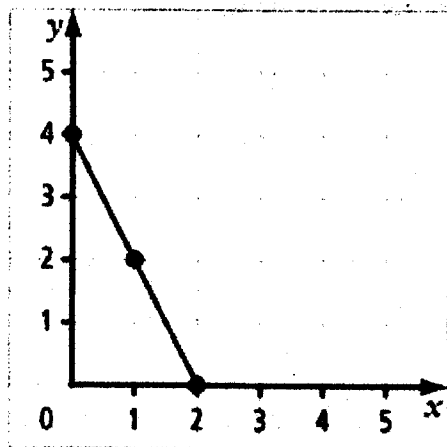
Assume that this graph shows air pressure at different altitudes. Use the graph to answer the following question(s).



1. According to the graph, the approximate altitude where the air pressure is 5 kPa is 7500 m

Explain how you know. *find 5 kPa on hor. then draw vert. line extend graph, where two meet, draw hor line to altitude #'s*

2. The linear equation that represents the graph shown below is $-2x + 4 = y$.
Use a table if necessary. Explain or show how you got the equation.



x	y
0	4
1	2
2	0

gap = -2

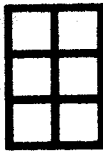
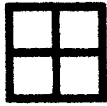
$-2x + 4 = y$

3. Each square in the pattern has a side length of 1 cm.

Figure 1

Figure 2

Figure 3



a) Create a table comparing the figure number with the area for that figure. Extend the table to include the next two figures in the pattern.

Figure number (f)	Area (a)
1	2
2	4
3	6
4	8
5	10

b) What is a linear equation that represents this pattern?

$$2f = a$$

4. Tracy is walking near a motion detector.

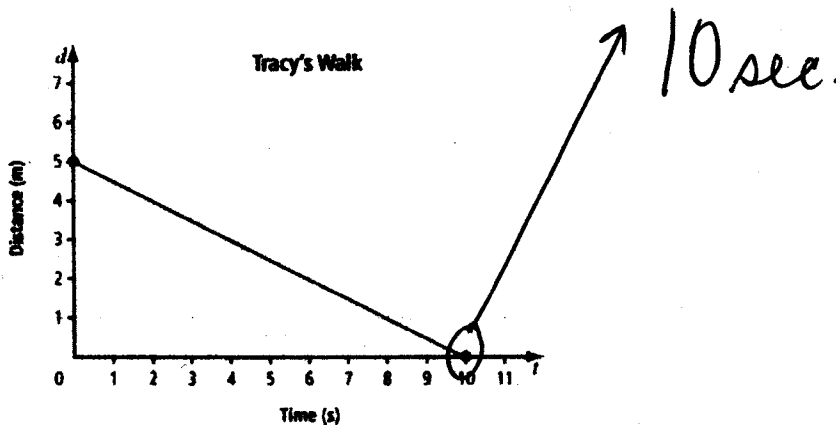
a) How far was Tracy from the sensor when she began walking? Explain how you know.

5m, time = 0 on her → matches 5 on vertical

b) Was she walking toward or away from the motion sensor at the time? Explain how you know.

toward, the distance decreased as time increased

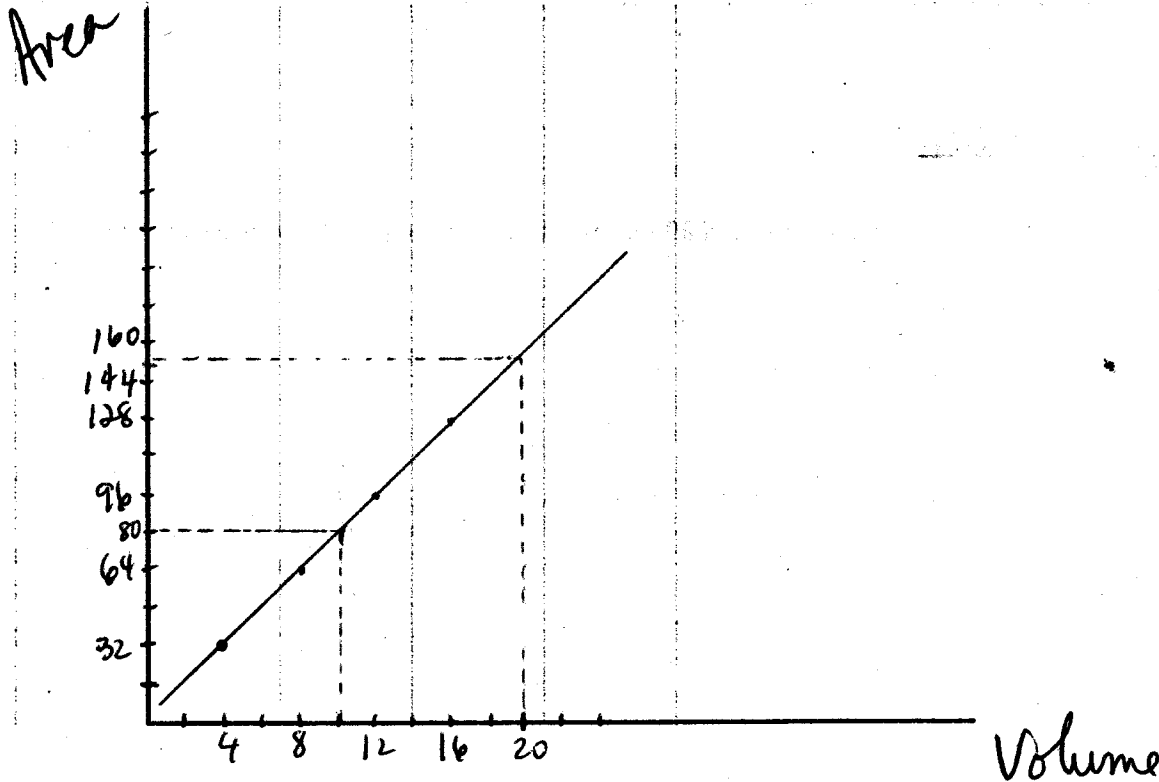
c) How long did it take her to reach the motion sensor?



This table of values shows the areas covered by different volumes of paint.

Volume (L)	Area (m ²)
4	32
8	64
12	96
16	128

a) Graph the linear relation represented by the table of values. (label the axis, pick a scale)



b) How many litres are required to paint 80 m²?

~ 10 L

c) How many square metres can be covered with 20 L of paint?

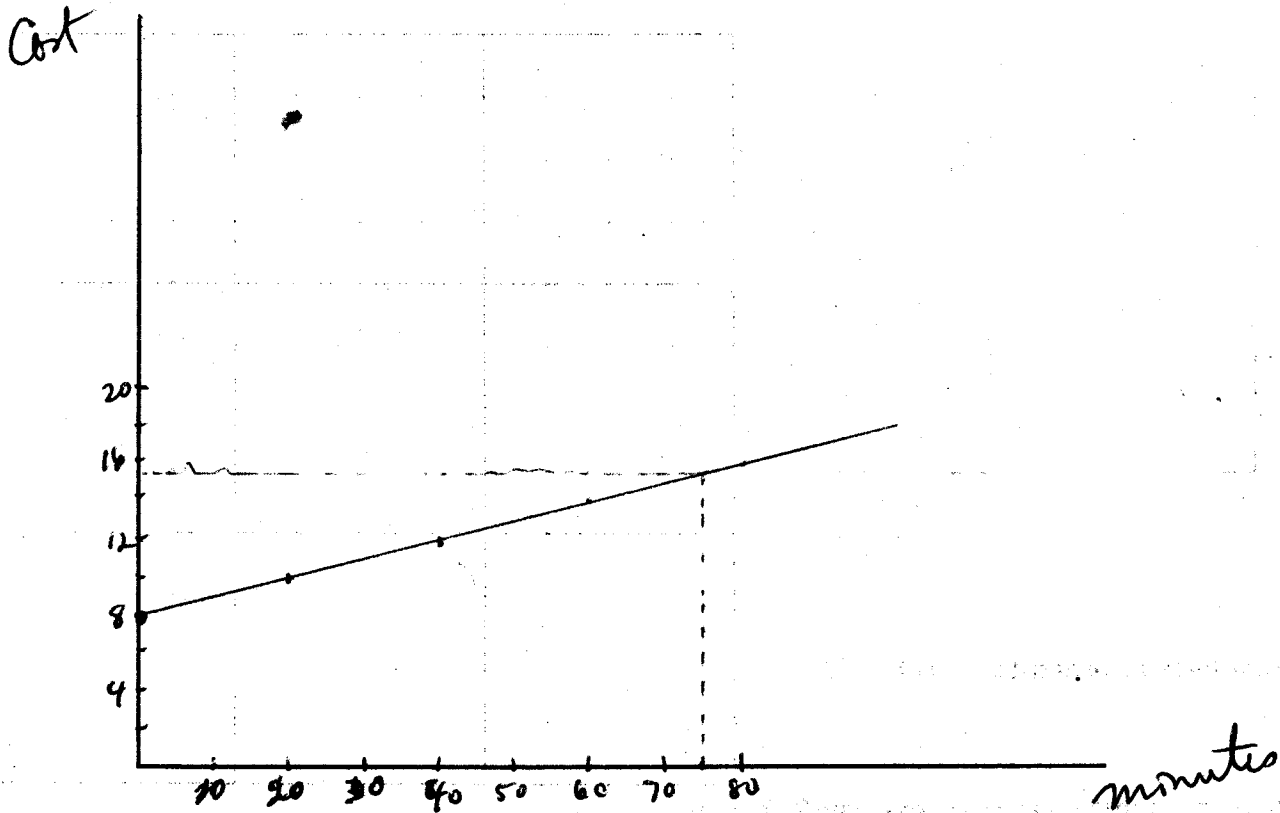
~ 160

6. A long distance phone plan charges a flat fee of \$8 per month, plus \$0.10 per minute of call time.
 a) Complete the table and write a linear equation to represent the relationship between the number of minutes of call time, n , and the total monthly cost, c .

number of minutes of call time (n)	total monthly cost (c)
0	8
20	10
40	12
60	14
80	16

equation $C = 8 + 0.10 \text{ minute}$

- b) Graph the linear relation using 0 min as the first point and 80 min as the last. (label the axis, choose a scale)



- c) What is the total cost for a month where the call time is 75 min?

~\$15.00

$$\begin{aligned}
 C &= 8 + 0.1(75) \\
 &= 8 + 7.5 \\
 C &= \$15.50
 \end{aligned}$$

Problem

7. A brick patio has 10 rectangular bricks in the first row. Each row of bricks in the patio has 2 more bricks than the previous row.
 a) Create a table of values showing the relationship between the first 4 rows and the number of bricks in each row.

Row # (r)	Number of bricks (n)
1	10
2	12
3	14
4	16
5	18

- b) What equation represents the relationship between the row number, r , and the number of bricks, n ?

$$2r + 8 = n$$

- c) How many bricks are in the 9th row? Show your work or explain.

$$2(9) + 8$$

$$18 + 8 = \underline{26 \text{ bricks}}$$

- d) There are 68 bricks in the final row. How many rows of bricks are in the patio? Show your work or explain.

$$2r + 8 = 68$$

$$2r = 60$$

$$r = \underline{30 \text{ rows}}$$

8. Abby and Braden are tiling a floor. All tiles are square. The figure below shows how many tiles Abby and Braden put in place, by the hour.

1 h

2 h

3 h



- a) Complete the table of values.

Time (h)	1	2	3	4	5
Dark grey tiles	3	6	9	12	15
Total tiles	6	12	18	24	30

- b) How many light grey tiles have been laid in five h?

15

- c) If there are 60 dark grey tiles to be laid, how long did it take to complete the work?

$$2 \times 30$$

$$\downarrow$$

$$30$$

$$2 \times 5h = 10 \rightarrow 10 \text{ hrs}$$

5

9. The letter Z is constructed from dots. The first three diagrams are shown below.

Figure 1

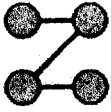


Figure 2

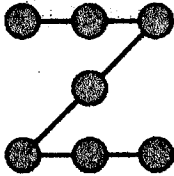
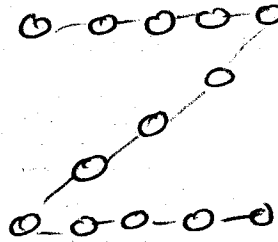
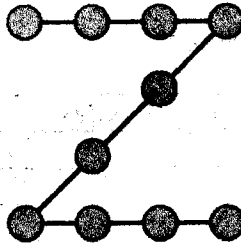


Figure 3

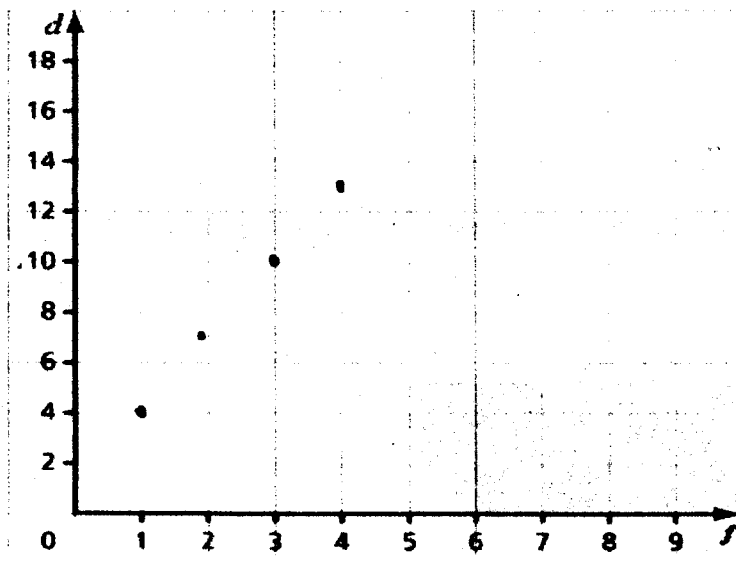


a) Draw the next diagram.

b) Create a table of values showing the relationship between the figure number, f , and the number of dots, d , for the first four figures.

Figure number (f)	Number of dots (d)
1	4
2	7
3	10
4	13

c) Graph the table of values.



d) Describe the relationship between the figure number and the number of dots.

$$3 \times \text{fig \#} + 1 = \text{dots}$$

e) What is the equation that represents the relationship between the figure number, f , and the number of dots, d ?

$$3f + 1 = d$$

f) How many dots would be in Figure 8?

$$3(8) + 1 = 24 + 1 = \underline{25 \text{ dots}}$$