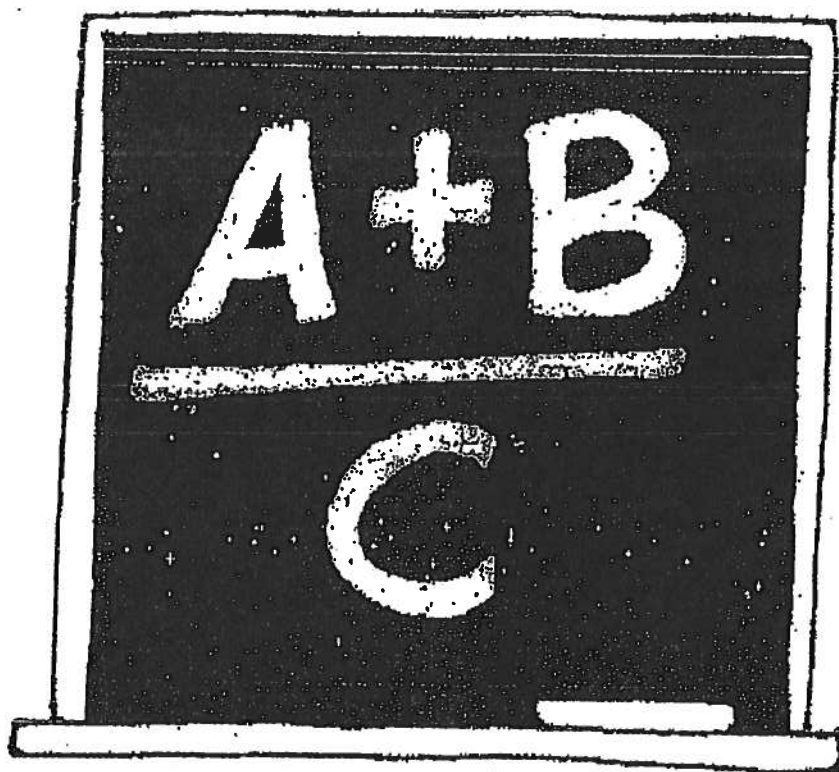


Sec 2 MATH -TERM 2-

Review Package



<http://school.discoveryeducation.com/clipart/images/mathbord.gif>

Name: _____

Teacher: _____



#1)

Solve each equation below

a) $3x + 4 - x + 8 = 3(2x - 1) + 8$

b) $4(2x - 1) + 2(4 - x) + 5x = 4(3 + 2x) - 3$

c) $8a + 4 - 2(a + 8) = -3(2a - 1) + 6$

d) $-4(2y - 1) - 2(4 + y) - 5y = 4(3 - 2y) + 3$

d) $-5n + 4 - n + 8 = -3(2n - 1) + 8$

e) $(2w + 9) + 3(4w - 1) - 9w = 4(3 + 2w) - 3$

2

Algebra : Review

Part A : Solving Equations

Solve for the variable in the following equations.

1. $6x = 3x + 12$

7. $5x - 4(2x + 11) = 13$

2. $5u - u = u + 15$

8. $\frac{3x+5}{2} = 7$

3. $5(z+6) = 8z$

9. $4 - \frac{3s}{5} = -2$

4. $8(4-u) + u = 8 + u$

9. $4(8-5y) = -2y-4$

5. $-3(x+5) = 2(x + 5)$

10. $3\frac{a}{4} + 5 = 11$

3

Part B : Solving Word Problems using Equations

Solve the following word problems. Include the "let statements", an equation, your work, and an answer statement for each problem.

1. The perimeter of a rectangle is 62 units. Its base is 3 units longer than its height. Determine the dimensions of the rectangle.
2. The sum of three consecutive numbers is 4770. What are the numbers?
3. Nathalie's mother is twice as old as her. Her father is seven years younger than her mother. The sum of all their ages is 138. How old is Nathalie's father?
4. Twenty-two more than twice a number is the same as 3 times the same number, minus 8. What is the number?
5. The lengths of the sides of a triangle are 3 consecutive numbers. The perimeter of the triangle is 69 cm. Find the lengths of the sides.

Name: _____

4

Rates, Ratios and Proportions

1 Soft drink cans usually hold 355 mL of liquid.
Which of the following purchases is the best buy?

- A) 1 can for \$1.00
- B) 6 cans for \$2.49
- C) 12 cans for \$3.29
- D) 24 cans for \$6.79

2 Which pair is a proportion?

- A) $\frac{1}{3}$ and 3
- B) $\frac{3}{4}$ and $\frac{9}{16}$
- C) 1.2 and $\frac{5}{6}$
- D) $\frac{8}{9}$ and $\frac{10}{11.25}$

3 Which pair of ratios does NOT form a proportion?

- A) $\frac{2}{3}$ and $\frac{34}{51}$
- B) $\frac{9}{12}$ and $\frac{12}{16}$
- C) $\frac{7.2}{12}$ and $\frac{12}{7.2}$
- D) $\frac{0.3}{12}$ and $\frac{7.5}{300}$

4 What is the value of the missing term in the following proportion?

$$\frac{0.1}{?} = \frac{1000}{100}$$

- A) 10
- B) 1
- C) 0.01
- D) 0.001

5 What is the value of the missing term in the following proportion?

$$\frac{10}{x} = \frac{15.75}{6.3}$$

5

6 In the following proportion, what is the value of the missing term?

$$\frac{50}{15} = \frac{150}{?}$$

- A) 500
- B) 112.5
- C) 45
- D) 5

7 Find the missing term in each of the following proportions.

a) $\frac{15}{6} = \frac{x}{12}$

b) $\frac{0.65}{x} = \frac{13}{100}$

8 Having recently thrown a party for your friends, you now know that you need 6 bags of chips for 8 people. Your sister is planning a party for 12 people and hopes your experience will help her determine how many bags of chips she will need.

Which of the following proportions will help her find out how many bags of chips she is going to need?

- A) $\frac{6}{8} = \frac{x}{12}$
- B) $\frac{6}{8} = \frac{12}{x}$
- C) $\frac{8}{6} = \frac{x}{12}$
- D) $\frac{8}{12} = \frac{x}{6}$

9 A cyclist travelled 775 km in 68 hours. At this speed, how many kilometres did he cover in 16 hours?

Which proportion can be used to solve the problem?

- A) $\frac{68}{775} = \frac{x}{16}$
- B) $\frac{775}{68} = \frac{x}{16}$
- C) $\frac{775}{68} = \frac{16}{x}$
- D) $\frac{775}{16} = \frac{68}{x}$

6

10 A restaurant cook prepares his recipe for spaghetti sauce. He usually adds 15 mL of salt for flavour.

The following week, he decides to adjust his original recipe to make it less salty.

Which adjustments should the cook make to ensure that his sauce is less salty?

- A) Add a can of tomato juice.
- B) Reduce the amount of tomato juice by one can.
- C) Double the recipe.
- D) Prepare half the recipe.

11 To make concrete, one needs 3 parts cement, 5 parts sand and 8 parts stone.

If Jack put 15 shovel-fulls of cement into the mixer, how many shovel-fulls of sand will he have to add?

- A) 15 shovels
- B) 24 shovels
- C) 25 shovels
- D) 40 shovels

12 A photograph is 10 cm long and 7 cm wide. After being enlarged, it is 15 cm long.

What is the width of the enlarged photo?

13 Simone takes her pulse and finds that her heart beats 18 times in 15 seconds.

At this rate, how many times does her heart beat in one minute (60 seconds)?

14 To make lemonade, 5 cans of water must be added to 2 cans of concentrate.

If Linda plans to use 9 cans of concentrate, how many cans of water must she add?

In a photograph, Cathy measures 3.2 cm and Jeffrey measures 3.8 cm. What is Cathy's actual height, in metres, if Jeffrey's actual height is 1.9 m?

7

- 16 Three friends shared the cost of a \$20 lottery ticket. The first gave \$5, the second \$7 and the third \$8. They were lucky and won a sum of \$7500.

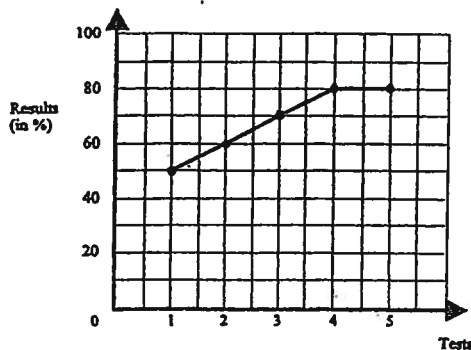
How much should the second person receive if the prize is shared proportionally to the cost of the ticket paid by each?

- 17 Angela knows that her car consumes 10.2 litres of gas per 100 kilometres. She wants to go on a 1000-kilometre trip.

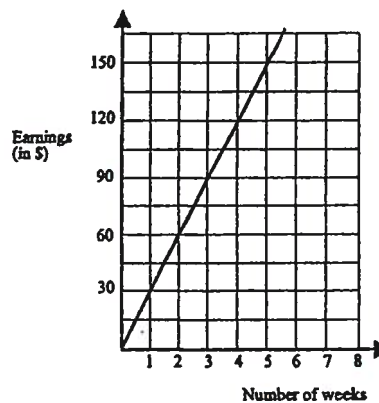
If gas presently cost \$0.67 a litre, how much will she spend on gas for her trip?

- 18 Which of the following situations represents a proportion?

A) Julie's math results



B) Mark's earnings during summer vacation



C)

Corner Pizza Store	
Number of slices	Price
4	\$6.40
6	\$8.60
8	\$10.80

- D) Nadine worked for 10 hours in preparation for her math exam and got 75 % on the exam. If she had studied for 15 hours, she would have had 100 %.

19 Canadian athletes won 13 medals at the 1994 winter Olympics in Lillehammer.

The types of medals won are listed in the table below.

Canada's Medals at Lillehammer

Gold	Silver	Bronze	Total
3	6	4	13

Quebec athletes won 9 of these medals. Myriam Bédard won two gold medals and a silver medal.

Express as a ratio the number of medals won by Myriam Bédard to the total number of medals won by Canadian athletes.

20 Gas consumption for 4 different cars was recorded over a period of time. Which chart represents a proportion?

A) 1st car

Litres of gas	6	10	16	30
Kilometres	126	210	336	600

B) 2nd car

Litres of gas	4	8	12	16
Kilometres	80	160	240	360

C) 3rd car

Litres of gas	3	6	12	18
Kilometres	64	128	256	384

D) 4th car

Litres of gas	1	2	3	4
Kilometres	29	30	31	32

10

Fill in each table using the rule described

Translate the rule into an algebraic expression

#1) Jake is 8 years younger than his cousin Terry

Terry's age(X)	10	14			25	29	33	Rule
Jakes' age (y)			9	15				

#2) Bobby and Jane both work at Coffee Stop. Jane works 3 hours less than twice Bobby's hours.

Bobby hours(X)	8	10	12		18		24	Rule
Janes' hours(Y)				27		39		

#3) The sides of a rectangle measure a third of the base.

Base length(X)	9 cm	15cm		27cm		40cm	45cm	Rule
Side length(Y)			7cm		12.5cm			

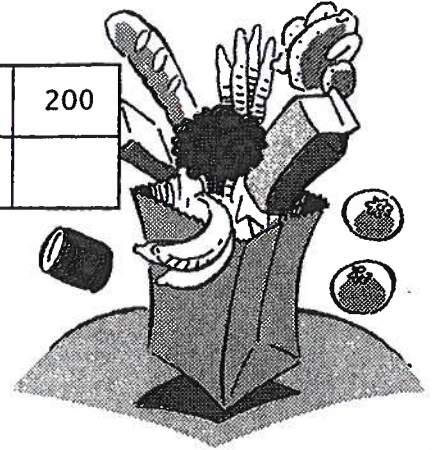
4. Martina takes part in a contest organized by the local supermarket. She receives one ticket for the first \$25 worth of purchases she makes, and an additional ticket for every \$10 she spends after that.

a) Complete the table of values for this relationship.

Purchases (\$)	25	35	55	105	150	200
Number of tickets						

b) How many tickets will she get if she spends \$125 on groceries? _____

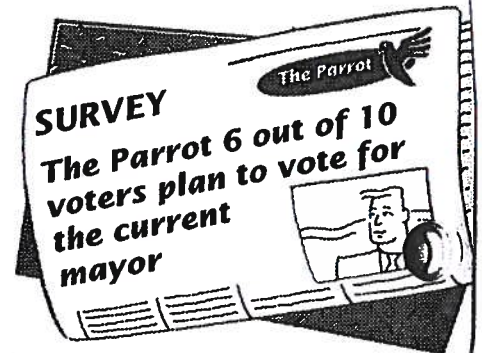
c) Martina got 15 tickets the last time she bought groceries. Give the minimum amount she must have spent. _____



5. The results of a pre-election survey are published.

a) Describe the relation between the number of votes for the current mayor and the number of voters by completing the statement.

"Generally, for every 10 people who vote, _____"

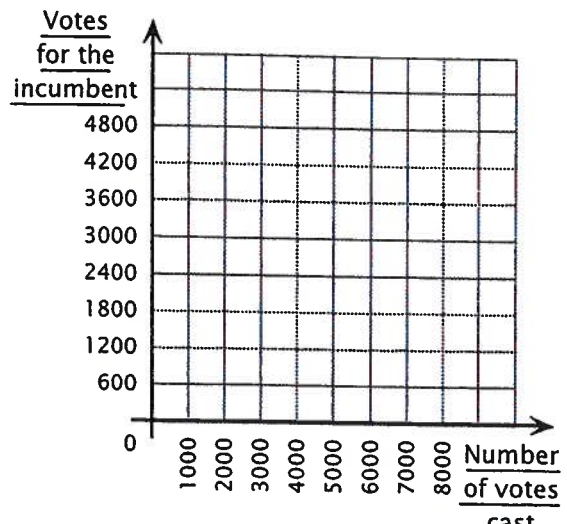
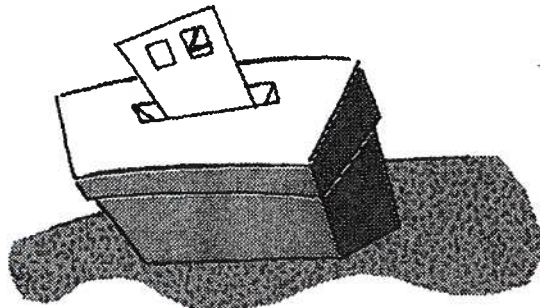


b) Complete the table to show the relation between the number of votes and the votes received by the current mayor.

Number of votes	10	100	1000	5000	...	n
Votes for the current mayor						

c) If the current mayor received 6900 votes, how many votes were cast? _____

d) Plot the relation on this Cartesian plane.





Graphs vs. Situations!

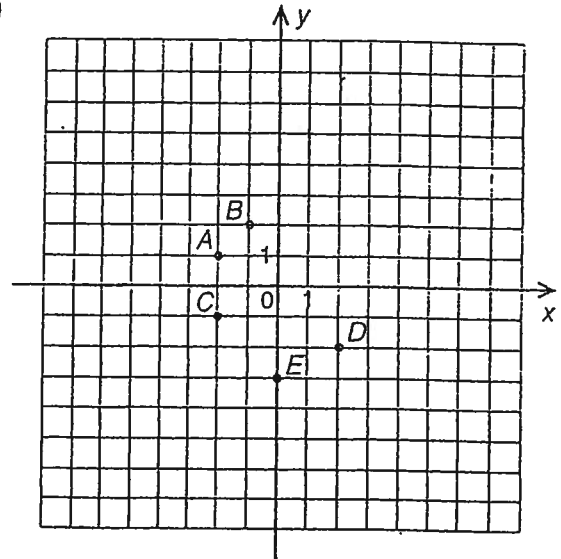
Name: _____

①

12

1. Who am I? (Answer using point A, B, C, D or E.)

- a) My coordinates are not zero and have the same sign.
- b) My x-coordinate is double my y-coordinate.
- c) The sum of my coordinates is greater than 0.
- d) My y-coordinate is 2.



2. What name is given to:

- a) the vertical axis on a Cartesian plane?
- b) an axis whose y-coordinates are zero?
- c) the point whose coordinates are (0, 0)?

3. In which quadrant (1st, 2nd, 3rd or 4th):

- a) is the point with coordinates (-3, -4) located?
- b) are the points whose coordinates are both positive located?

④ Graph point F (3, 1)

⑤ CREATE 2 LINES ON THE GRAPH

1st \overline{AB} connect A to B

2nd \overline{CF} connect C to F

⑥ At what point will these 2 lines cross? ()
In which quadrant? _____

13

6. Every minute, your heart beats a certain number of times.

a) On a graph, on which axis would time go? _____

b) Construct a table of values given that your heart beats 36 times in 30 seconds.

Time (min)	Number of heartbeats
0	
$\frac{1}{2}$	36
1	
2	
3	
4	
...	...
n	

7. Isabel rode her bike 12 km farther than Brent. Construct a table of values showing some ordered pairs of the relation between the distances covered by each.

Distance covered by Brent (km) x	0	5	10	15	20
Distance covered by Isabel (km) y					

RULE?

8. In Patricia's card collection, there are 6 fewer hockey cards than twice the number of baseball cards. Construct a table of values showing 4 possible ordered pairs of this relation.

x Number of baseball cards	50	75	100	125
y Number of hockey cards				

RULE?

9. A waiter usually gets an 18% tip for a 100\$ meal

a) Complete the table of values below that represents such a relation.

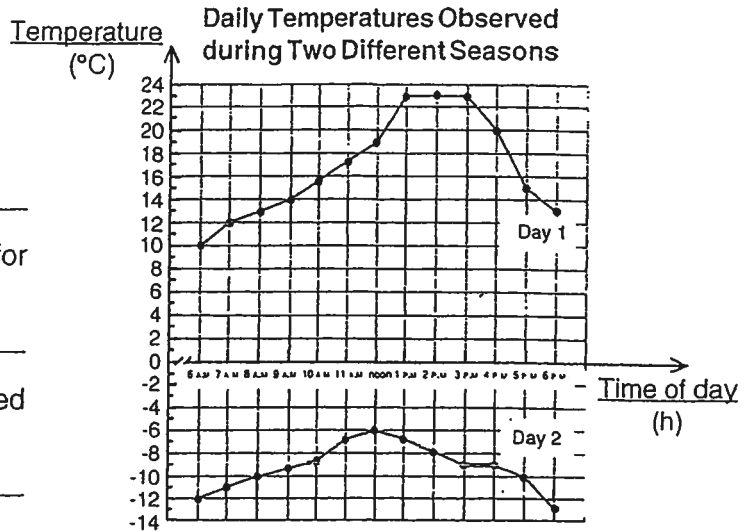
Bill (\$)	50	100	200	500	1 000
Tip (\$)		18			

6. The following graph represents the temperatures observed on two separate days at two very different times of the year.

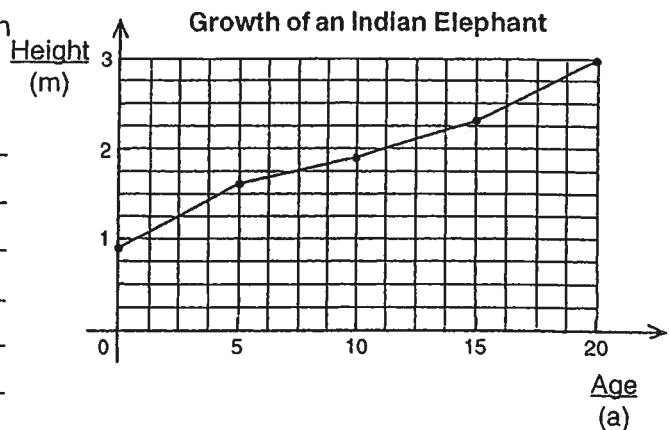
a) Indicate the season for each day.

b) What was the highest temperature for each day?

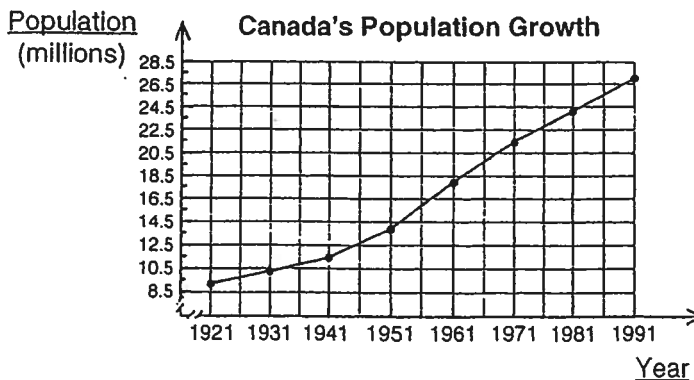
c) During which day could it have rained in the morning?



7. The following graph represents the relation between the age and average height of an Indian elephant. In your own words, explain the elephant's growth through the years.



8. The following graph illustrates the growth of Canada's population.



a) What was the population in 1951? _____

b) Describe the growth of Canada's population during the past few decades.

c) What should Canada's population be in the year 2000? _____

15

9. Tim is 6 years older than his brother Leonard.

a) Complete the table of values below and find the general rule.

Leonard's age	1	2	3	4	5	6	7	...	x	...
Tim's age							

b) What is Tim's age if Leonard is 32 years old? _____

c) If Leonard is presently 18 years old, in how many years will Tim be 45? _____

10. Edith is a market gardener and harvests an average of 8 potatoes per plant.

a) Complete the table of values corresponding to this situation.

Number of plants	1	2	3	4	5	6	7	...	x	...
Number of potatoes harvested							

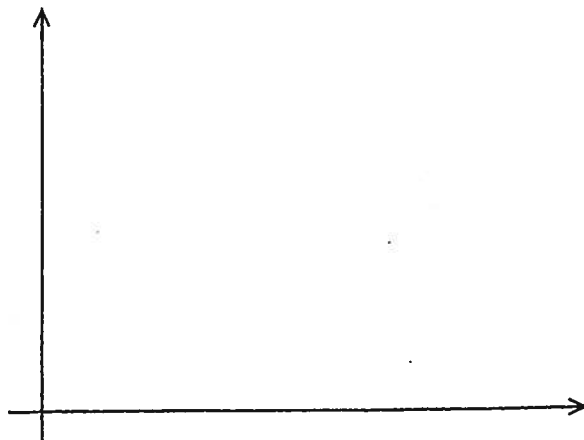
b) If Edith digs up 16 plants, how many potatoes will she have? _____

c) How many plants will she need to harvest 200 potatoes? _____

11. Daniel wanted to jump rope better than anyone else at his school. One morning he jumped 40 times in a row and decided to jump an additional 5 times every day.

a) Construct a table of values that shows the number of times Daniel will jump rope during the first 10 days.

b) On a Cartesian plane, represent the relation between the days and the number of jumps.



c) How many times will Daniel jump rope on the 20th day? _____

d) On which day will Daniel jump 115 times? _____

16

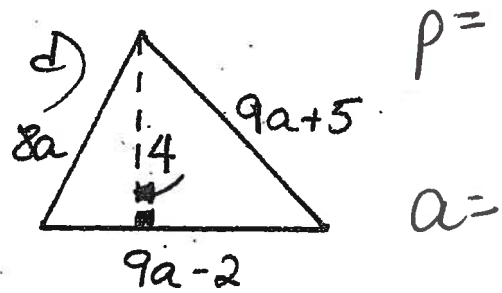
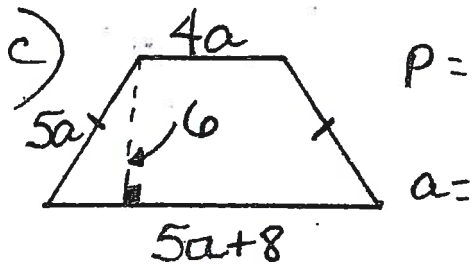
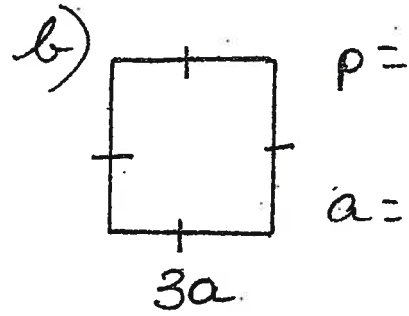
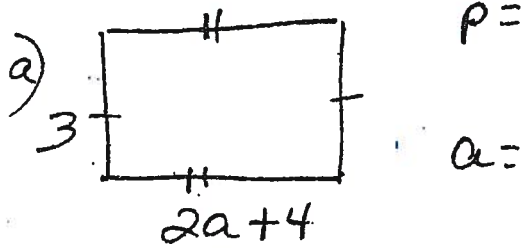
Word Problems

Solve each word problem on a sheet of paper by creating a subject box, solving an equation and writing out the answer in sentence form.

- A) The perimeter of a rectangle is 54cm. The length is 3cm less than twice the width. How long is each side of this rectangle (in cm)?
- B) 180\$ was divided among 3 people. The 2nd person received 6\$ less than twice as much as the 1st person and the 3rd person received 7\$ more than the 2nd person. How much money did each person receive?
- C) Mount Mojo and Mount Fuji combined heights are 7, 595m above sea level. Mount Fuji is 1,500m lower than 4 times the height of Mount Mojo. How high is Mount Fuji?
- D) Maria, Eric and Jen picked apples last week. Eric picked double the amount that Maria picked. Jen collected 5 apples less than Eric. Together, they picked 55 apples. How many apples did Jen pick?
- E) A farmer grows tomato plants as well as cucumber vines. Last year a ~~quarter~~ of his vegetables were cucumber vines and the rest were tomato plants. Altogether he grew 1288 plants and vines. How many cucumber vines did he grow.
- F) Valerie, Marc and Julie sold chocolate bars for school. Julie sold half as many bars as Valerie and Marc sold 15 more bars than Valerie. Their combined total in chocolate bars sold was 225. How many bars did Julie and Marc sell each.
- G) A pair of boots and a jacket cost 210\$. The ~~boots~~ cost 36\$ more than half the price of the jacket. How much is each item worth?
- H) Ryan is twice the age of his little sister. The sum of their ages is 36 years. How old is Ryan?
- I) In an isosceles triangle, the base is 20cm shorter than triple the length of one side. The perimeter of the triangle is 730cm. Find the length (in cm) of each side.
- J) The sum of 4 consecutive #'s is -294. What are these #'s?

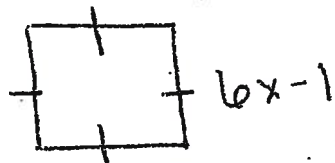
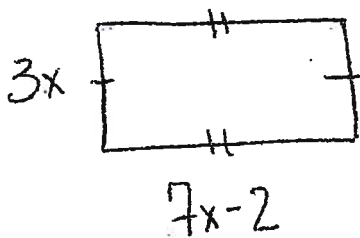
(17)

#1 Calculate the simplified area & perimeter for each figure.



#2

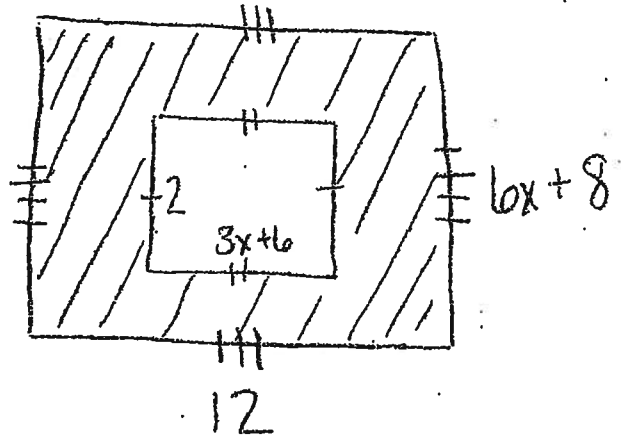
Find the difference in perimeter of the following figures...



Difference in perimeter:

(18)

#2. Find the area of the shaded region...



Area of large rectangle

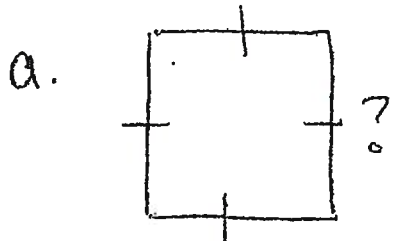
Area of smaller rectangle

Area of shaded region

(19)

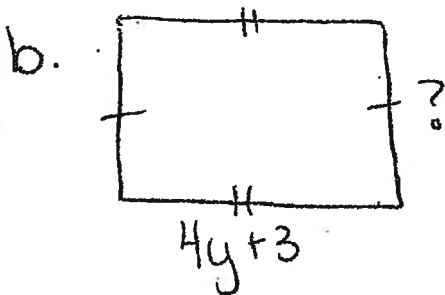
-8-

#4. Find the length of the missing side.

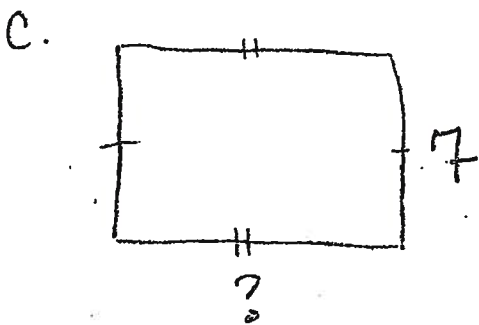


If the perimeter of the square is $28x + 36$.

*You have to work BACKWARDS!!!



If the perimeter is $12y + 8$.



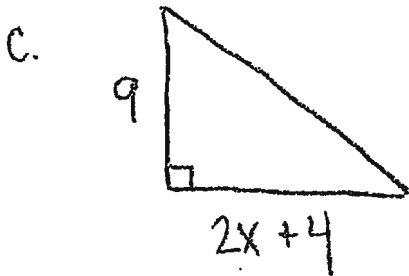
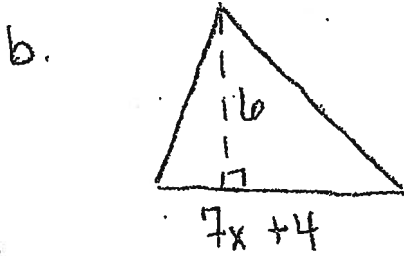
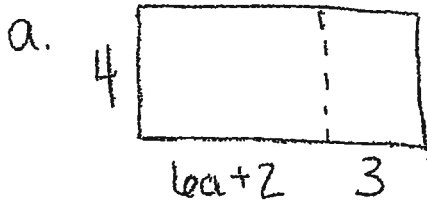
If the area is $63x - 49$.

** How to do perimeter backwards: ① SUBTRACT 2 sides given from perimeter

② \div above answer by 2 to get 1 missing side

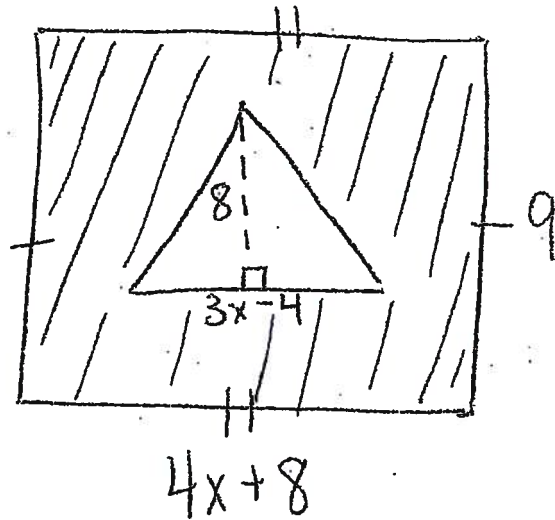
20

#1 Find the area of the following...



(21)

#3. Find the area of the shaded region.



Area of rectangle

Area of triangle

Area of shaded region

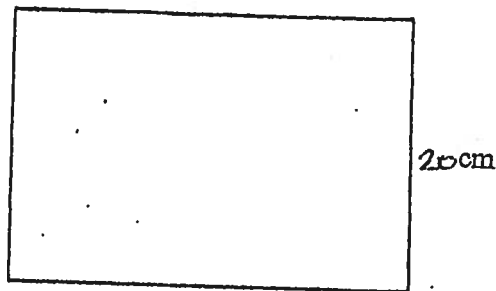
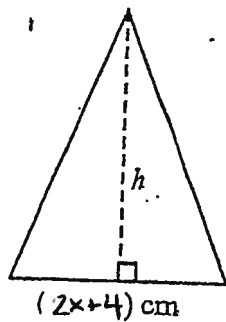
22

#12)

The height of triangle is equal to the height of the rectangle

The base of the rectangle is twice the base of the triangle

The combined area of the triangle and the rectangle is 480cm^2



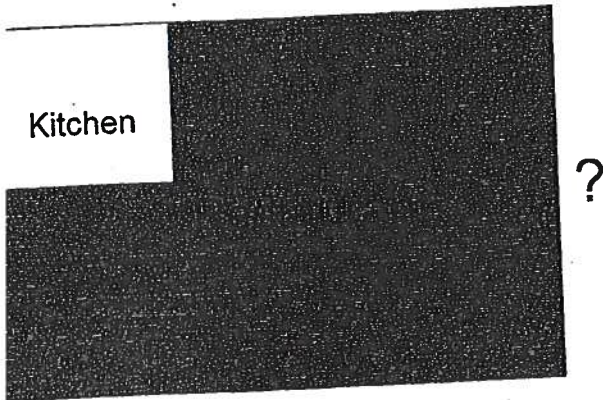
What is the perimeter of the rectangle in cm?

23

#14) A restaurant has a perimeter of 600 m with a length that is 1.5 times longer than its' width.

The kitchen is $\frac{1}{6}$ of the total area of the restaurant

a) What are the length and width of the restaurant?



b) What is the area of the kitchen as well as a possible length and width?

