Christmas Break

Revision

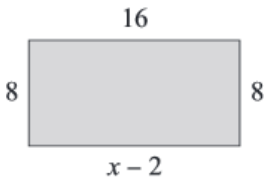
Don't Forget

1) Solve the following equations

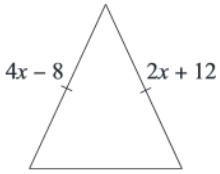
1. $x - 2(x - 1) = 1 - 4(x + 1)$
2. $\frac{x+4}{4} = \frac{2x-1}{3}$
3. $\frac{5}{x-1} = \frac{10}{x}$
4. $9w - 5 = 2$
5. $2(2x + 3)=14$
6. $4(2x + 1) = 2(3x + 5)$
7. $5(2x + 1) - 5 = 2(6x + 5)$
8. $70 = 10(2 - 5y)$
9. $3(2w + 7) - 5 = 4(3w - 6) + 35$

2) I think of a number. I add 9 onto the number then multiply the answer by 3. This gives 36. What was the number I started with?

3) Find the value of x in this rectangle



4) This is an isosceles (the 2 marked sides are equal in length) triangle. Find x.



5) The length of a rectangle is 10 m more than its breadth. If the perimeter of rectangle is 80 m, find the dimensions of the rectangle.

6) A 300 m long wire is used to fence a rectangular plot whose length is twice its width. Find the length and breadth of the plot.

7) The denominator of a fraction is greater than the numerator by 8. If the numerator is increased by 17 and denominator is decreased by 1, the number obtained is 3/2, find the fraction.

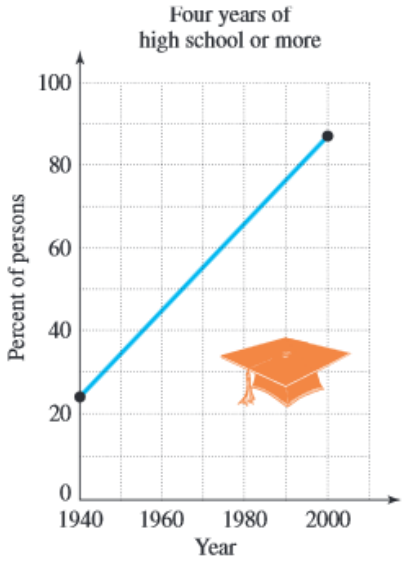
8) In a two digit number, the ten's digit is twice the unit's digit. If 18 is added to the number, the digits interchange their places. Find the numbers.

Completing high school

In 1940 only 24% of persons 25 years and over had completed 4 years of high school or more, but that percentage has been growing steadily as shown in Fig. 2.1 (Census Bureau, www.census.gov). The expression $1.05n + 24$ gives the percentage of persons 25 and over who have completed 4 years of high school in the year $1940 + n$.

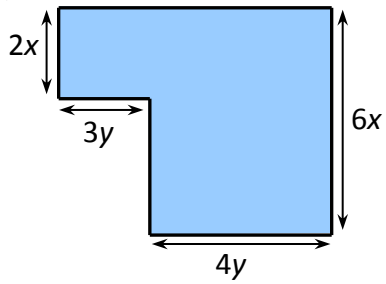
a) What was the percentage in 1998?

9) **b)** When will the percentage reach 94%?

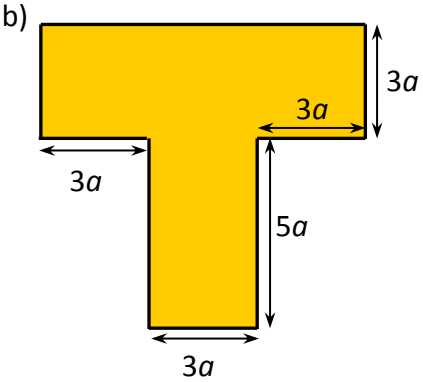


10) . Find algebraic expressions for the perimeter and area of these shapes.

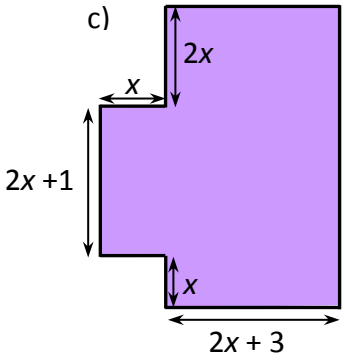
a)



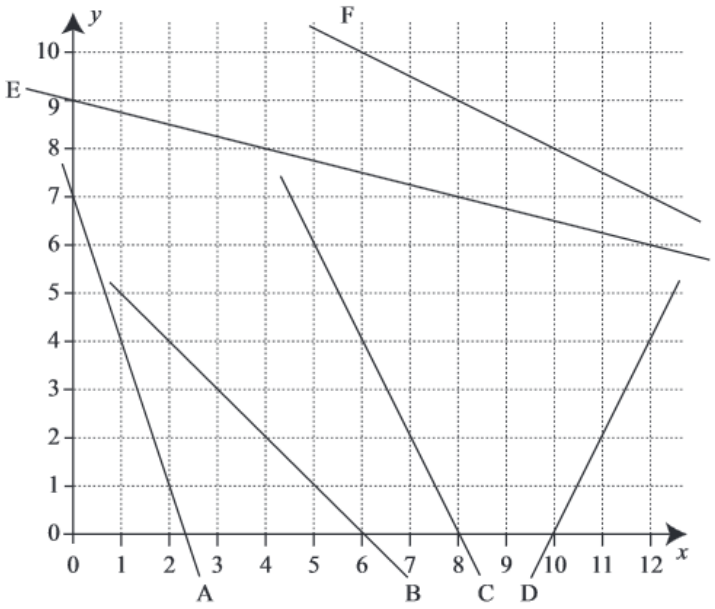
b)



c)



11) Find the gradient of each line below:



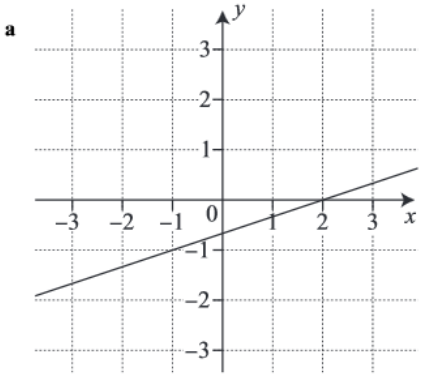
12) Find the gradient of the line joining each pair of points below:

a. (2, 4) and (3, 7)
b. (1, 0) and (4, 5)
c. (1, 4) and (3, 2)
d. (1, 5) and (5, 2)

13) A line passes through the points (2, 6) and (5, y). If the gradient of the line is -3, write down the value of y.

14) Write down the gradient of any line perpendicular to the line shown:

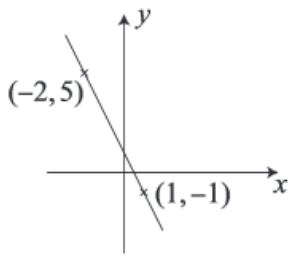
a.



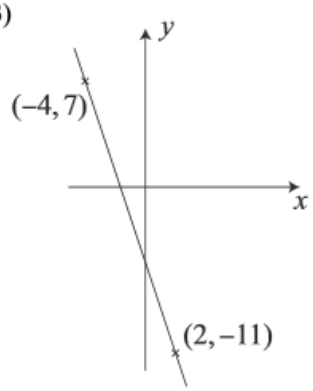
Write down the equation of the line which is perpendicular to the line shown above and passes through (0,2).

15) Find the equation of the line which passes through the given point and is perpendicular to the given line in each of the following cases.

a $(1, 11)$ $x + 6y = 6$
c $(6, 7)$



b $(3, 8)$ $x + 3y = 12$
d $(-3, -3)$



16) What is the slope of a line

a. Parallel and

b. perpendicular to

$$\frac{y-2}{3} + \frac{x+4}{6} = 2\ ?$$

17) Scan the QR code into your mobile device to get a challenge question to solve.