

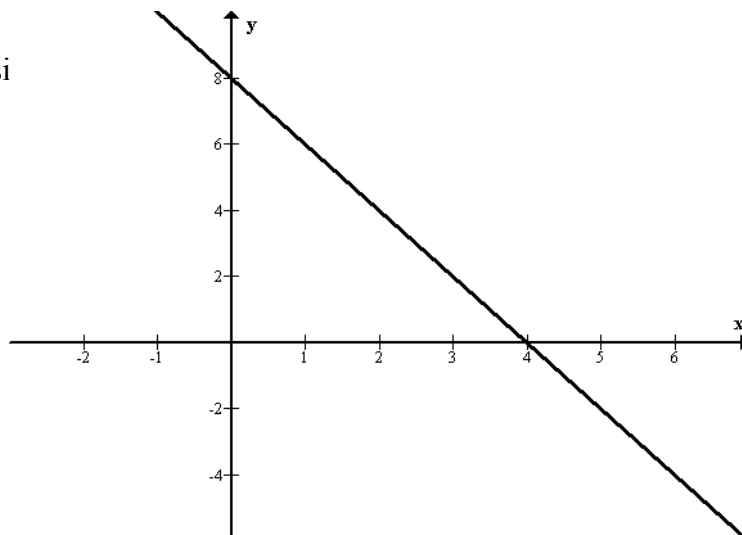
S3 Homework 5

Non-calculator section:

1. Evaluate $21.4 \div 4 + 0.172$
2. $f(x) = 3x^3 - 2x^2$. Find $f(-2)$.
3. Solve the equations $5g + 2h = 7$
 $2g - 3h = 18$

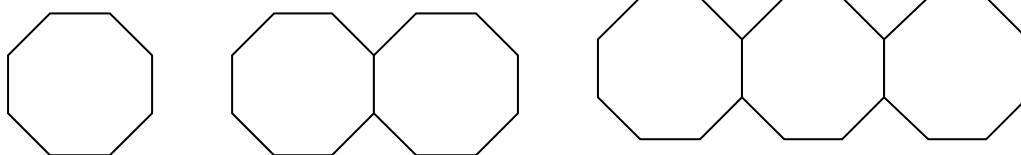
4. (a) Find the equation of the line opposite

(b) The point $(-14, u)$ lies on this line.
Find u .



5. (a) Expand the brackets and simplify $(2x - 4)(x^2 + 2x + 4)$
(b) Solve $6x - 3 = 2 - 4(1 - x)$

6. Matchsticks are arranged in the pattern shown below



(a) Copy and complete the table below

No. of octagons (P)	1	2	3	4	5	6	20
No. of matches (Q)	8	15	22				

(b) Write down a formula connecting P and Q.

Calculator section:

7. (a) Calculate the mean and standard deviation of

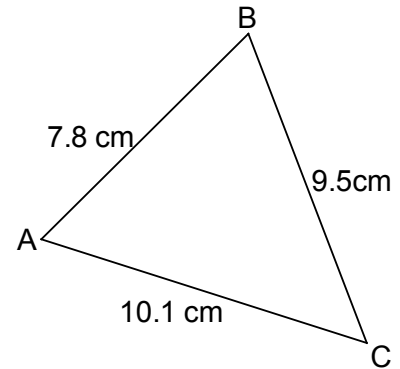
13 16 20 12 16 18 17

(b) Each value in (a) is decreased by 5. Write down the mean and standard deviation of the numbers now.

8. The diagram opposite shows a triangle ABC

(a) Calculate the size of angle BAC.

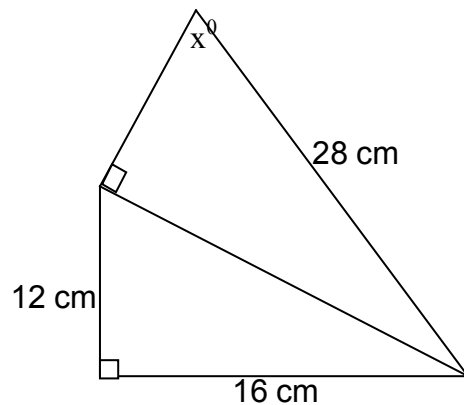
(b) Find the area of the triangle.



9. Solve the equation $5 + 3 \tan x^\circ = 8 \sin 30^\circ$ $0^\circ \leq x^\circ \leq 360^\circ$

10. Jessica uses her credit card to buy a video ipod costing £189. She is charged interest at a rate of 2.6% per month. If she does not repay any money calculate how much she will owe in 8 months time.

11. Calculate the size of angle x° in the diagram.



12. A piece of metal is in the shape of prism whose cross-section is made from 2 sectors of circles with radii as shown.

The depth of the metal is 30 mm.

Calculate the volume of this piece of metal.

