

S3 Credit – Homework 11

Non-calculator section:

1. (a) Evaluate $14.12 - 0.46 \times 30$

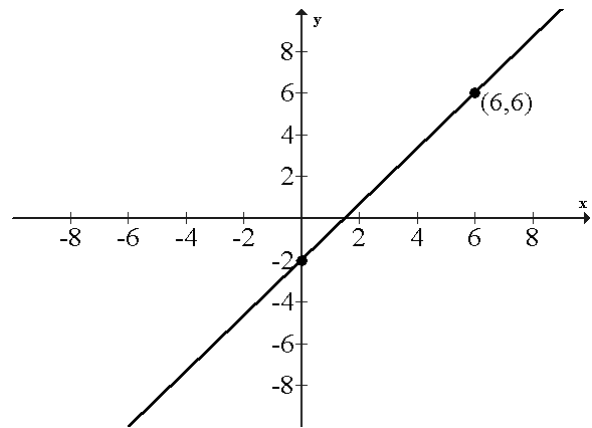
(b) $f(x) = 6x - 4x^2$. find $f(-2)$.

2. (a) Factorise $x^2 - 3x - 10$

(b) Hence simplify $\frac{x^2 - 3x - 10}{2x^2 - 10x}$

3. (a) Find the equation of the line shown.

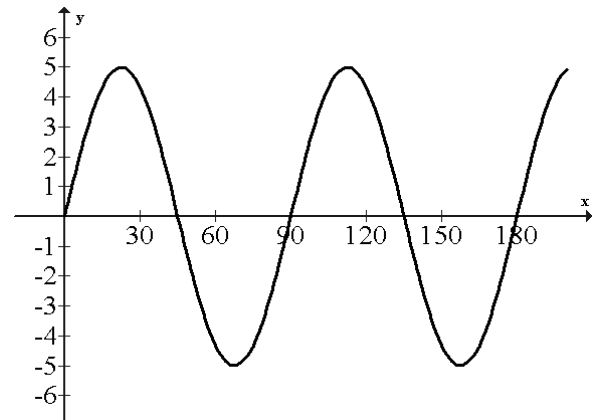
(b) The point $(15, a)$ lies on this line.
Find a .



4. Solve the equation $5x^2 = 8x + 4$

5. The diagram shows the graph of $y = a \sin bx$.

Write down the values of a and b .



Calculator section:

6. (a) The prices of a bag of sugar in 6 different shops are

84p 90p 83p 80p 82p 85p

Calculate the mean and standard deviation of these prices.

(b) In 6 different shops the same bag of sugar has a mean price of 87 pence and a standard deviation of 5.2 pence.

Make two comparisons between the prices in the two sets of shops.

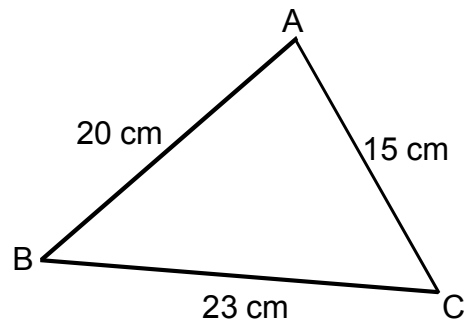
7. Solve $x^2 - x - 10 = 0$ **giving your answers correct to one decimal place.**

8. The profit made by a fast food retailer in 2006 was £210 000. The retailer expects to increase profits at a steady rate of 3.5% each year for the next 5 years. Calculate the expected profit of the retailer in 5 years time.

9. The diagram opposite shows a triangle ABC.

(a) Calculate the size of angle ABC.

(b) Calculate the area of the triangle.



10. A multinational car making company made a loss of $£2.55 \times 10^8$ in 2005.

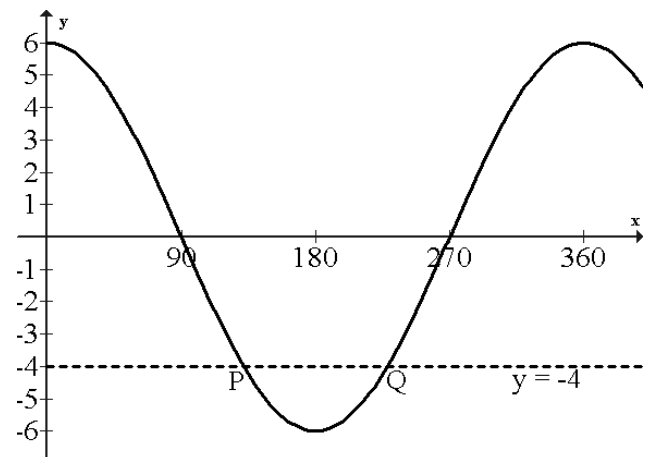
Calculate the loss made by the company per minute.

Give your answer in Scientific Notation.

11. The diagram shows the graph of $y = a \cos x$.

(a) Write down the value of a.

(b) On the graph the line $y = -4$ is also drawn. Find the coordinates of P and Q.



12. The logo below consists of a banner containing 3 equal sized sectors of a circle with radius 15 cm.

Calculate the total area of the sectors.

