

## Homework 2

1. A formula is defined as  $E = 5p + q^2$

Calculate the value of  $E$  when  $p = -4$  and  $q = -3$

2. Break the brackets and simplify

(a)  $(6x - 5)(3x + 4)$                       (b)  $(2x + 1)^2$

(c)  $56 - (5 - q)^2$

3. Solve the equations.

(a)  $5(2x + 1) = 55$       (b)  $-2(3x + 4) = 4x + 2$

4. Solve the inequalities.

(a)  $8 - 5a > 12$                       (b)  $2b + 8 < 6b - 3$

5. Two boys have the same amount of money and are deciding how many bars of Willy Wonka chocolate to buy.

John buys two bars of chocolate and has £6.60 left over.

Ahmed buys 5 bars of chocolate and has £3.00 left over.

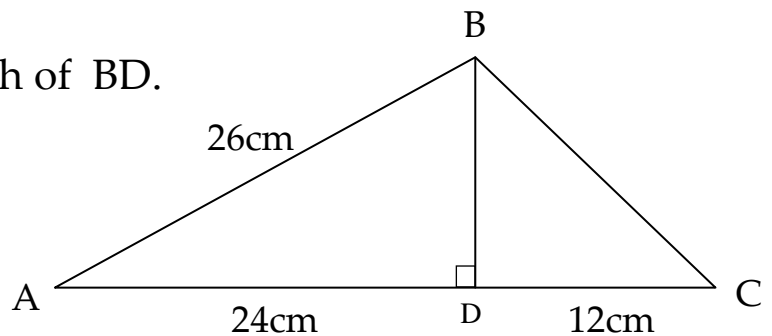
- (a) Using  $£b$  for the cost of one bar of chocolate, write down an equation to illustrate the above information.

(b) Solve the equation to find the cost of one bar of chocolate.

(c) How much did the boys have to start with.

6. Consider the framework opposite.

(a) Calculate the length of  $BD$ .



(b) Hence calculate the length of  $BC$ .

(c) Calculate the area of triangle  $ABC$ .

7. Use Pythagoras to find the distance between the points

$A(12, 9)$  and  $B(-2, 10)$ .

8. Round each number to the given number of significant figures.

(a)  $23\,417$  (2 sig fig)

(b)  $129\,034$  (3 sig fig)

(c)  $23.493$  (1 sig fig)

(d)  $0.02393$  (2 sig fig)