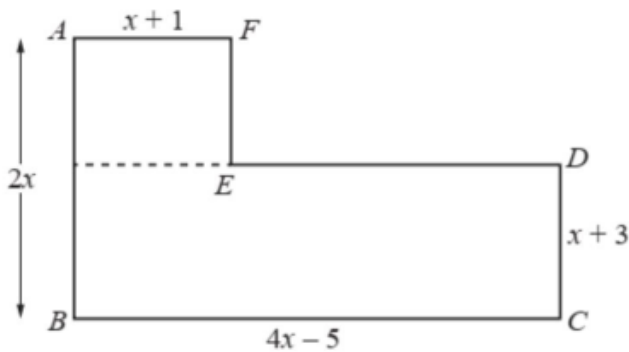




1. All the lengths in this question are in centimetres.



The diagram shows a shape ABCDEF made from two rectangles

The total area of the shape is 342cm^2 .

- show that $x^2 + x - 72 = 0$ [5]
- Solve by factorization $x^2 + x - 72 = 0$. [3]
- Work out the perimeter of the shape ABCDEF. [2]
- Calculate angle DBC [2]

0580/43/M/J/20 Q5)

2. The cost of a bottle of water is $(w - 1)$ cents.
 The cost of a bottle of milk is $(2w - 11)$ cents.
 A certain number of bottles of water costs \$4.80 .
 The same number of bottles of milk costs \$7.80 .
 Find the value of w . [4]

0580/43/O/N/15 Q7(c)



3. The cost of one ruler is r cents.

The cost of one protractor is p cents.

The total cost of 5 rulers and 1 protractor is 245 cents.

The total cost of 2 rulers and 3 protractors is 215 cents.

Write down two equations in terms of r and p
and solve these equations to find the cost of one
protractor. [5]

0580/41/O/N/19 Q7(b)

4. The cost to hire a tent consists of two parts.

$$\boxed{\$c} + \boxed{\$d \text{ per day}}$$

The total cost for 4 days is \$27.10 and for 7 days is \$34.30.

Write down two equations in c and d and solve them. [4]

0580/42/O/N/11 Q1(b)

5. The cost of 1 apple is a cents.

The cost of 1 pear is p cents.

The total cost of 7 apples and 9 pears is 354 cents.

(i) Write down an equation in terms of a and p . [1]

(ii) The cost of 1 pear is 2 cents more than the cost of 1 apple.

Find the value of a and the value of p [3]

0580/42/O/N/17 Q8(a)



6. The cost of a small bottle of juice is \$ y .
The cost of a large bottle of juice is \$ $(y + 1)$.
When Catriona spends \$36 on small bottles only,
she receives 25 more bottles than when she
spends \$36 on large bottles only
- (i) Show that $25y^2 + 25y - 36 = 0$. [3]
 - (ii) Factorise $25y^2 + 25y - 36$ [2]
 - (iii) Solve the equation $25y^2 + 25y - 36 = 0$ [1]
 - (iv) Find the total cost of 1 small bottle of juice
and 1 large bottle of juice [1]
- 0580/43/M/J/12 Q10(b)**

7. The cost of a biscuit is x cents.
The cost of a cake is $(x + 3)$ cents.
The number of biscuits Roshni can buy for 72 cents
is 2 more than the number of cakes she can
buy for 72 cents.
- (i) Show that $x^2 + 3x - 108 = 0$. [3]
 - (ii) Solve the equation $x^2 + 3x - 108 = 0$ [3]
 - (iii) Find the total cost of 2 biscuits and 1 cake. [1]
- 0580/43/O/N/11 Q5(b)**



8. In a shop, the price of a monthly magazine is \$ m and the price of a weekly magazine is \$ $(m - 0.75)$.

One day, the shop receives

- \$168 from selling monthly magazines
- \$207 from selling weekly magazines.

The total number of these magazines sold during this day is 100

(i) Show that $50m^2 - 225m + 63 = 0$. [3]

(ii) Find the price of a monthly magazine.

Show all your working. [3]

0580/43/M/J/18 Q5 (c)

9. Paulo and Jim each buy sacks of rice but from different shops

Paulo pays \$72 for sacks costing \$ m each.

Jim pays \$72 for sacks costing \$ $(m + 0.9)$ each.

(a) (i) Find an expression, in terms of m , for the number of sacks Paulo buys. [1]

(ii) Find an expression, in terms of m , for the number of sacks Jim buys. [1]

(b) Paulo buys 4 more sacks than Jim.

Write down an equation, in terms of m ,

and show that it simplifies to $10m^2 + 9m - 162 = 0$ [4]

(c) (i) Solve $10m^2 + 9m - 162 = 0$ [4]

(ii) Find the number of sacks of rice that Paulo buys. [1]

0580/41/O/N/18 Q9)



10. Ahmed sells different types of cake in his shop.

The cost of each cake depends on its type and its size.

Every small cake costs \$ x and every large cake costs \$ $(2x + 1)$.

(a) The total cost of 3 small lemon cakes and 2 large lemon cakes is \$12.36 .

Find the cost of a small lemon cake. [3]

(b) The cost of 18 small chocolate cakes is the same as the cost of 7 large chocolate cakes.

Find the cost of a small chocolate cake.[3]

(c) The number of small cherry cakes that can be bought for \$4 is the same as the number of large cherry cakes that can be bought for \$13.

Find the cost of a small cherry cake. [3]

(d) Petra spends \$20 on small coffee cakes and \$10 on large coffee cakes.

The total number of cakes is 45.

Write an equation in terms of x .

Solve this equation to find the cost of a small coffee cake.

Show all your working. [7]

0580/42/O/N/20 Q5) (a)

Answer

Q1) (a) $(4x - 5)(x + 3) + (x + 1)(x - 3) = 342$ (b) $(x + 9)(x - 8) = 0$ leading to -9 and 8 (c) 86 (d) 22.2	Q6) (i) $36/y - 36/(y + 1) = 25$ (ii) $(5y + 9)(5y - 4)$ (iii) -1.8 oe, 0.8 (iv) 2.6
Q2) 25	Q7) (i) $72/x - 72/(x + 3) = 2$ (ii) -12, 9 (iii) 30
Q3) $5r + p = 245$, $2r + 3p = 215$, [p=] 45 (r=40)	Q8) (i) $168/m + 207/(m - 0.75) = 100$ (ii) $(10m - 3)(5m - 21) = 0$, 4.2
Q4) $c + 4d = 27.10$, $c + 7d = 34.30$, (c =) 17.5(0) and (d =) 2.4(0)	Q9) (a)(i) $72/m$ (ii) $72/(m + 0.9)$ (b) $72 / m - 72 / (m + 0.9) = 4$ (c)(i) $(2m + 9)(5m - 18) = 0$, 3.6 and -4.5 (ii) 20
Q5) (i) $7a + 9p = 354$ (ii) [a =] 21, [p =] 23	Q10) (a) 1.48 (b) 1.75 (c) 0.8 (d) $\frac{20}{x} + \frac{10}{2x+1} = 45$, $90x^2 - 5x - 20 = 0$, $(9x + 4)(2x - 1) = 0$, 0.5 (final answer)