FA Problem Solving Questions – Set 6a

51a *LMN* is a straight line and is parallel to *PQ*

$MN = \bar{N}P$
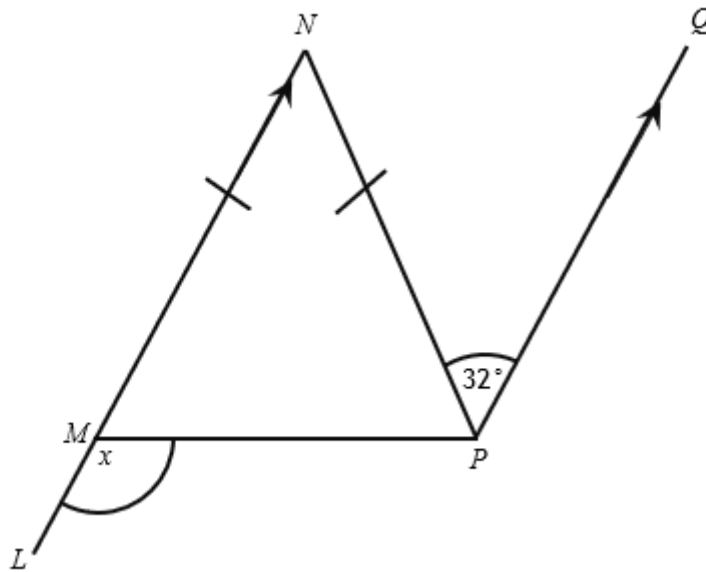
N   Q   Not drawn accurately

32°

M
x

L

Work out the value of x
Give reasons for your answer.

[3 marks]

52a.

Pictures **NOT**
accurately drawn

A 20 Euro note is a rectangle 133 mm long and 72 mm wide.

A 500 Euro Note is a rectangle 165 mm long and 82 mm wide.

Show that the two rectangles are not mathematically similar.

(3 marks)

53a. Alison ran 800m in 2 min 48 sec.

    (a)   What was her average speed in metres/sec?
    (b)   If she ran at the same speed for 10 mins how far would she run?
    (c)   Is this a realistic estimate for how far she could run in 10mins?

(4 marks)

54a. Mrs Collins is organising a school trip.
120 students are going on the trip.

The ratio of the number of staff to the number of students must be 1 : 15

Mrs Collins books three coaches for the trip.
Each coach has 42 seats.

Are there enough seats for all the students and staff?
You must show all your working.

(4 marks)

55a. Which of these two Radox Handwash offers is the best value for money?

500ml bottles on offer at 3 for 2   Price for each £1.90

Or 300ml bottles on offer at buy one get one free   Price for each £1.88

You must show all of your working

(3 marks)

56a. 120 children went on a school activities day.
Some children went bowling.
Some children went to the cinema.
The rest of the children went skating.

66 of these children were girls.
28 of the 66 girls went bowling.
36 children went to the cinema.
20 of the children who went to the cinema were girls.
15 boys went skating.

Work out the number of children who went bowling.

(4 marks)

57a. White paint cost £2.80 a litre.
Blue paint cost £3.50 a litre.
White and blue paint are mixed in the ratio 3:2

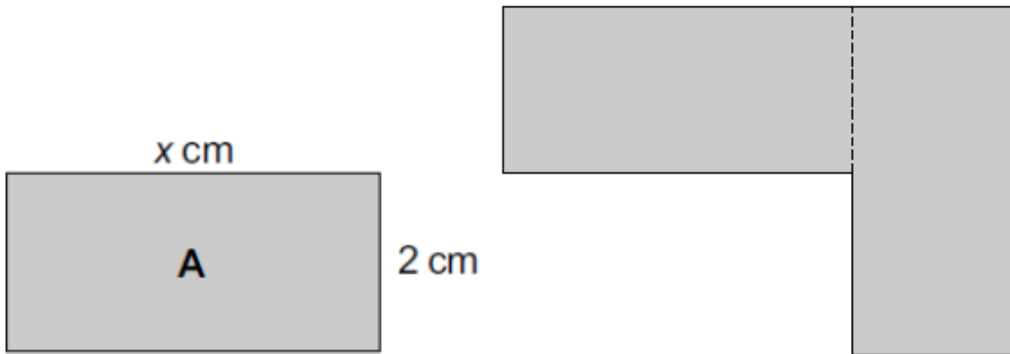a)   How much is the cost of 5 litres of the mixture?

(2 marks)

b)   How much is the cost of 18 litres of the mixture?

(2 marks)

58a. All tickets for a concert are the same price.
Amy and Dan pay £63 altogether for some tickets.
Amy pays £24.50 for 7 tickets.
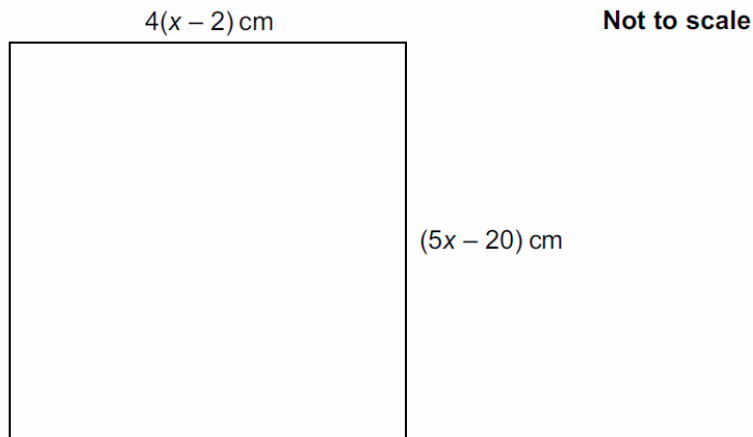How many tickets does Dan buy?

(4 marks)

59a. Shape A is a rectangle of length x cm and width 2 cm.

Work out an expression for the perimeter of this shape.
Give your answer in its simplest form. **(3 marks)**

60a.

Work out the area of this square. **(3 marks)**