Write your name here

Surname	Other names

Pearson Edexcel
Level 1/Level 2 GCSE (9 - 1)

Centre Number	Candidate Number

Mathematics

Paper 1 (Non-Calculator)

Foundation Tier

Specimen Papers Set 1	Paper Reference
Time: 1 hour 30 minutes	**1MA1/1F**

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- **Calculators may not be used.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out**.

Information

- The total mark for this paper is 80
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

S49815A

S 4 9 8 1 5 A 0 1 2 0

PEARSON

19 A shop sells milk in 1 pint bottles and in 2 pint bottles.

Each 1 pint bottle of milk costs 52p.
Each 2 pint bottle of milk costs 93p.

Martin has **no** milk.

He assumes that he uses, on average, $\frac{3}{4}$ of a pint of milk each day.

Martin wants to buy enough milk to last for 7 days.

(a) Work out the smallest amount of money Martin needs to spend on milk.
You must show all your working.

$7 \times \frac{3}{4} = \frac{21}{4} = 5\frac{1}{4}$ pints

Needs 6 pints

93
3
279

£2.79

£.....

(3)

Martin actually uses more than $\frac{3}{4}$ of a pint of milk each day.

(b) Explain how this might affect the amount of money he needs to spend on milk.

.....

.....

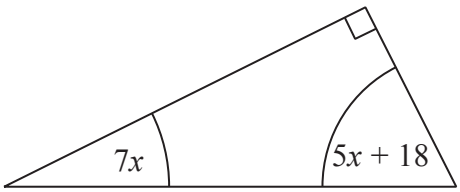
.....

.....

(1)

(Total for Question 19 is 4 marks)

20 The diagram shows a right-angled triangle.



All the angles are in degrees.

Work out the size of the smallest angle of the triangle.

$7x + 5x + 18 + 90 = 180$

$12x + 108 = 180$

$12x = 180 - 108$

$12x = 72$

$x = \frac{72}{12}$ $\quad x = 6$

$7x = 42$

$5x + 18 = 5(6) + 18 = 48$

42 °

(Total for Question 20 is 3 marks)

21 A box exerts a force of 140 newtons on a table.
The pressure on the table is 35 newtons/m^2.

Calculate the area of the box that is in contact with the table.

$$p = \frac{F}{A}$$

p = pressure
F = force
A = area

$P = \frac{F}{A}$

$AP = F$

$A = \frac{F}{P} = \frac{140}{35} = 4\ m^2$

(Total for Question 21 is 3 marks)

22 There are only red counters, blue counters, green counters and yellow counters in a bag.

The table shows the probabilities of picking at random a red counter and picking at random a yellow counter.

Colour	red	blue	green	yellow
Probability	0.24	0.22	0.22	0.32

The probability of picking a blue counter is the same as the probability of picking a green counter.

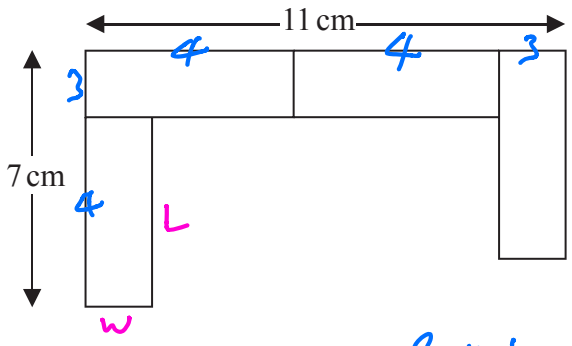
Complete the table.

$1 - 0.56 = 0.44$

$\frac{0.44}{2} = 0.22$

(Total for Question 22 is 2 marks)

23 A pattern is made using identical rectangular tiles.



Find the total area of the pattern.

Block $4 \times 3 = 12\ cm^2$

$\therefore 4 \times 12 = 48\ cm^2$

$L + w = 7$ (1)

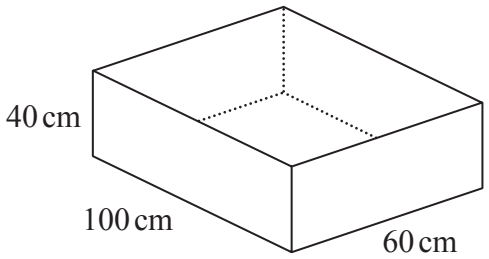
$2L + w = 11$ (2)

(2) − (1) $L = 4$ $w = 3$

..... cm^2

(Total for Question 23 is 4 marks)

24 The diagram shows a sand pit.
The sand pit is in the shape of a cuboid.



Sally wants to fill the sand pit with sand.
A bag of sand costs £2.50
There are 8 litres of sand in each bag.

Sally says,

"The sand will cost less than £70"

Show that Sally is wrong.

(Total for Question 24 is 5 marks)

25 Four friends each throw a biased coin a number of times.
The table shows the number of heads and the number of tails each friend got.

	Ben	Helen	Paul	Sharif
heads	34	66	80	120
tails	8	12	40	40

300
100
400

The coin is to be thrown one more time.

(a) Which of the four friends' results will give the best estimate for the probability that the coin will land heads?
Justify your answer.

Sharif as he carried out more throws

(1)

Paul says,

"With this coin you are twice as likely to get heads as to get tails."

(b) Is Paul correct?
Justify your answer.

(2)

The coin is to be thrown twice.

(c) Use all the results in the table to work out an estimate for the probability that the coin will land heads both times.

$P(H) = \frac{3}{4}$ $P(HH) = \frac{3}{4} \times \frac{3}{4} = \frac{9}{16}$

(2)

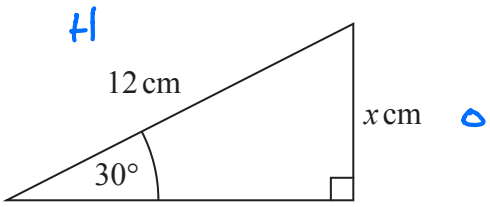
(Total for Question 25 is 5 marks)

26 (a) Write down the exact value of $\cos 30°$

$\frac{\sqrt{3}}{2}$

(1)

(b)



Given that $\sin 30° = 0.5$,
work out the value of x.

$\sin 30° = \frac{x}{12}$

$0.5 = \frac{x}{12}$

$12 \times 0.5 = x$

$x = 6$ cm

(2)

(Total for Question 26 is 3 marks)

27 Expand and simplify $(x + 3)(x - 1)$

$= x^2 + 3x - x - 3$

$= x^2 + 2x - 3$

(Total for Question 27 is 2 marks)

DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA

28 Factorise $x^2 - 16$

$= x^2 - 4^2 = (x+4)(x-4)$

.....

(Total for Question 28 is 1 mark)

29 Solve the simultaneous equations

$4x + y = 25$ (1)
$x - 3y = 16$ (2)

(1) × 3 $\quad 12x + 3y = 75$ (3)

(2) + (3) $\quad 13x = 91$

$x = \frac{91}{13} = 7$

$x = 7$

Sub for x in (1) $\quad 4(7) + y = 25$

$28 + y = 25$

$y = 25 - 28 = -3$

$x =$ 7 , $y =$ −3

(Total for Question 29 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS