



CLASSIFIED

International Examinations Papers

Mob: +974 55373670 / 33787500
E-mail: chymrc.muhammad@gmail.com

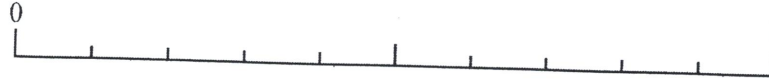
MATHEMATICS - CORE

TOPIC- PROBABILITY

01

A bag contains 20 counters.
10 counters are red, 8 are blue and the rest are yellow.
One counter is taken from the bag at random.

(a) Mark an arrow on the probability scale to show the probability that the counter is red.



12/11/16

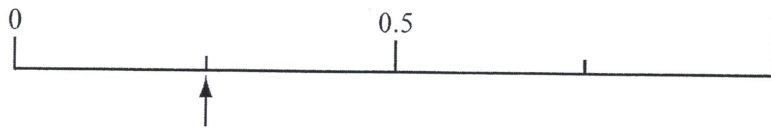
[1]

(b) Find the probability that the counter is yellow.

..... [1]

02

A bag contains 20 counters.
One counter is taken from the bag at random.
The arrow on the probability scale shows the probability that this counter is blue.



(a) Work out the number of blue counters in the bag.

Answer(a) [1]

(b) Find the probability that the counter is **not** blue.

Answer(b) [1]

13/11/14



3 (a) Sweets are sold in packets.
There are n sweets in each packet.

(i) Maya has 4 packets of sweets and 21 extra sweets.

Write an expression, in terms of n , for the number of sweets Maya has.

Answer(a)(i) [1]

(ii) Tassos has $5n + 3$ sweets.
Roma has $3n + 27$ sweets.
Tassos and Roma each have the same number of sweets.

Write down an equation, in terms of n , and solve it.

Answer(a)(ii) $n =$ [3]

(iii) Work out the number of sweets Tassos and Roma have altogether.

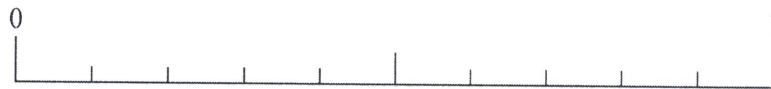
Answer(a)(iii) [1]

(b) A different packet of sweets contains 6 red sweets, 10 yellow sweets and 4 green sweets.
Simon takes one sweet from the packet at random.

(i) Write down the colour of sweet Simon is most likely to take.

Answer(b)(i) [1]

(ii) On the probability scale, draw an arrow to show the probability that Simon's sweet is yellow.



[1]

(iii) Write down the probability that Simon's sweet is green.

Answer(b)(iii) [1]

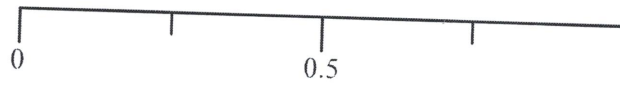
(iv) Write down the probability that Simon's sweet is red or yellow.

Answer (b)(iv) [1]

04

- (a) A bag contains 16 counters.
4 of the counters are blue.
A counter is taken from the bag at random.

On the probability scale, draw an arrow (\downarrow) to show the probability that this counter is blue.



[1]

- (b) Another bag contains 5 black counters, 8 white counters, 6 green counters and 1 yellow counter.
A counter is taken from this bag at random.

Find the probability that this counter is

- (i) white,

..... [1]

- (ii) not white.

..... [1]



05

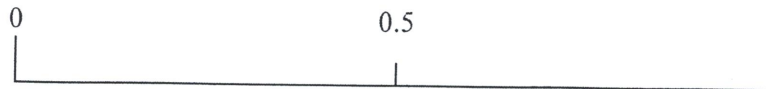
A B C D E F G H I J K

(a) A letter is chosen at random from the list above.

Write down, as a fraction, the probability that the letter has **no** curved parts.

Answer(a) [1]

(b) On the probability scale, mark an arrow to show this probability.



[1]

ELEPHANT

06

Francesca chooses a letter at random from this word.

(a) Write down the letter she is most likely to choose.

..... [1]

(b) Write down the probability that she chooses the letter R.

..... [1]



13/2/13

11/2/16

07 A letter is chosen at random from the following word.

STATISTICS

Write down the probability that the letter is

(a) **A** or **I**,

Answer(a) [1]

(b) **E**.

Answer(b) [1]

12/11/11

08

S **P** **A** **C** **E** **S**

One of the 6 letters is taken at random.

(a) Write down the probability that the letter is S.

Answer(a) [1]

(b) The letter is replaced and again a letter is taken at random.
This is repeated 600 times.

How many times would you expect the letter to be S?

Answer(b) [1]

11/11/13



09

(b) The table shows the results of asking 24 children their favourite colour.

Colour	Red	Blue	Yellow	Green	Pink
Number of children	4	8	2	3	7

Write down the probability, as a fraction, that the favourite colour of a child chosen at random is

(i) blue,

Answer(b)(i) [1]

(ii) not pink.

Answer(b)(ii) [1]

(c) The information in **part (b)** is to be shown in a pie chart.

Work out the sector angle for green.
Do not draw the pie chart.

Answer(c) [2]



The exchange rate between the dollar and the Thai Baht is $\$1 = 31.48$ Baht.

- (a) Andy buys a watch in New York for \$84.

How much is this in Baht?

..... Baht [1]

- (b) Ning buys a watch in Bangkok for 4200 Baht.

How much is this in dollars?

\$ [2]

- (a) A bag contains 3 red, 5 blue and 4 green counters. A counter is picked at random.

Work out the probability that the counter is

- (i) blue,

..... [1]

- (ii) yellow.

..... [1]

- (b) The probability of picking a brown counter from another bag is 0.35.

Work out the probability of not picking a brown counter.

..... [1]

- 11 (a) The probability that the school bus is late is 0.29.

Write down the probability that the school bus is **not** late.

Answer(a) [1]

- (b) A fridge contains 12 beef pies, 3 vegetable pies and 5 chicken pies.
One pie is taken at random from the fridge.

Find the probability that it is

- (i) a vegetable pie,

Answer(b)(i) [1]

- (ii) a beef pie or a vegetable pie,

Answer(b)(ii) [1]

- (iii) a lamb pie.

Answer(b)(iii) [1]

Celine buys a bag of 24 tulip bulbs.
There are 8 red bulbs and 5 white bulbs.
All of the other bulbs are yellow.

Celine chooses a bulb at random from the bag.

- (a) Write down the probability that the bulb is red or white.

Answer(a) [1]

- (b) Write down the probability that the bulb is yellow.

Answer(b) [1]

12 A bowl of fruit contains only 8 peaches, 5 oranges and 6 apples.
One piece of fruit is chosen at random.

Write down the probability that it is

(a) an orange,

Answer(a) [1]

(b) not a peach.

Answer(b) [1]

13 (a) The probability that FC Victoria wins the cup is 0.18 .

Work out the probability that they do **not** win the cup.

Answer(a) [1]

(b) After training, the shirts are washed.
There are 5 red, 3 blue and 6 green shirts.
One shirt is taken from the washing machine at random.

Find the probability that it is

(i) red,

Answer(b)(i) [1]

(ii) blue or green,

Answer(b)(ii) [1]

(iii) white.

Answer(b)(iii) [1]

- 14 Chico has a bag of sweets.
He takes a sweet from the bag at random.
The table shows the probabilities of taking each flavour of sweet.

Flavour	Lemon	Lime	Strawberry	Blackcurrant	Orange
Probability	0.15	0.22		0.18	0.24

- (a) Complete the table. [2]
- (b) Find the probability that the sweet is lemon or lime.

Answer(b) [1]

- 15 A biased 4-sided dice is rolled.
The possible scores are 1, 2, 3 or 4.
The probability of rolling a 1, 3 or 4 is shown in the table.

Score	1	2	3	4
Probability	0.15		0.3	0.35

Complete the table. [2]

76

Amir also asked these 15 friends which was their favourite sport.
His results are shown in the table below.

Football	4
Cricket	5
Basketball	2
Badminton	4

Amir picks one of these friends at random.

Write down the probability that his friend's favourite sport is

(i) cricket,

Answer(b)(i) [1]

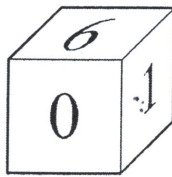
(ii) not football,

Answer(b)(ii) [1]

(iii) basketball or badminton.

Answer(b)(iii) [1]

77



The die in the diagram has a number on each face.

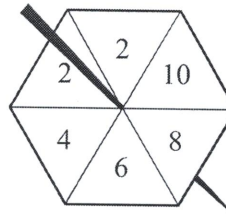
The numbers are 0, 0, 1, 2, 4, 6.

The die is rolled until it shows 0 on the top face.

Find the probability that this happens for the first time on the third roll.

Answer [2]

18 (a) Jon spins this 6-sided spinner.



For
Examiner's
Use

The probability that the spinner lands on any of the six sides is equally likely.

Write down the probability that the spinner lands on

(i) the number 6,

Answer(a)(i) [1]

(ii) a prime number,

Answer(a)(ii) [1]

(iii) a number less than 11.

Answer(a)(iii) [1]

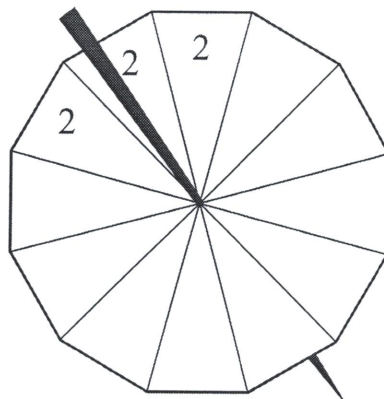
(b) Felix has a 12-sided spinner with the numbers 2, 4, 5, 7 and 9 written on it. It is equally likely to land on any side.

The table shows the probability of the spinner landing on each number.

Number on spinner	2	4	5	7	9
Probability	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{12}$

The diagram of the spinner has been completed for the number 2.

Complete the diagram for the numbers 4, 5, 7 and 9.



[3]

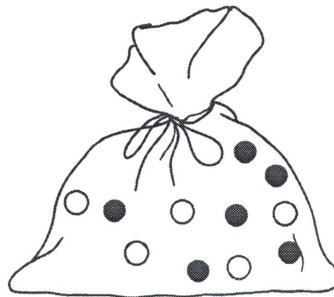
(c) Felix says that his spinner is more likely to land on a 2 than Jon's spinner.

Explain why he is wrong.

Answer(c)

..... [1]

- 19 (a) A bag contains 5 white and 6 black marbles.



- (i) A marble is chosen at random from the bag and then replaced.

Write down the probability that the marble is black.

..... [1]

- (ii) Delilah adds some more black marbles to the bag.
The probability of choosing a black marble is now $\frac{2}{3}$.

How many black marbles did she add to the bag?

..... [2]

- (b) A white marble costs w cents and a black marble costs b cents.

- (i) 2 white marbles and 5 black marbles cost 155 cents.

Complete the equation.

$2w + 5b = \dots\dots\dots$ [1]

- (ii) 3 white marbles and 10 black marbles cost 290 cents.

Write down an equation to show this information.

..... [1]

- (iii) Solve your two equations to find the value of w and the value of b .
You must show all your working.

$w = \dots\dots\dots$

$b = \dots\dots\dots$ [3]

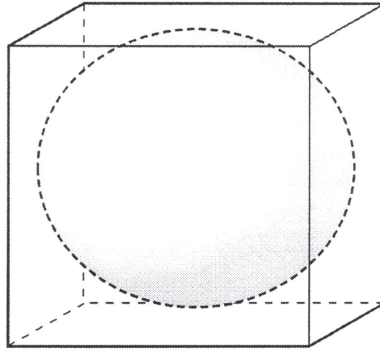
- (c) A black marble is weighed and its mass, m grams, is 35 g correct to the nearest 5 g.

Complete the statement about the value of m .

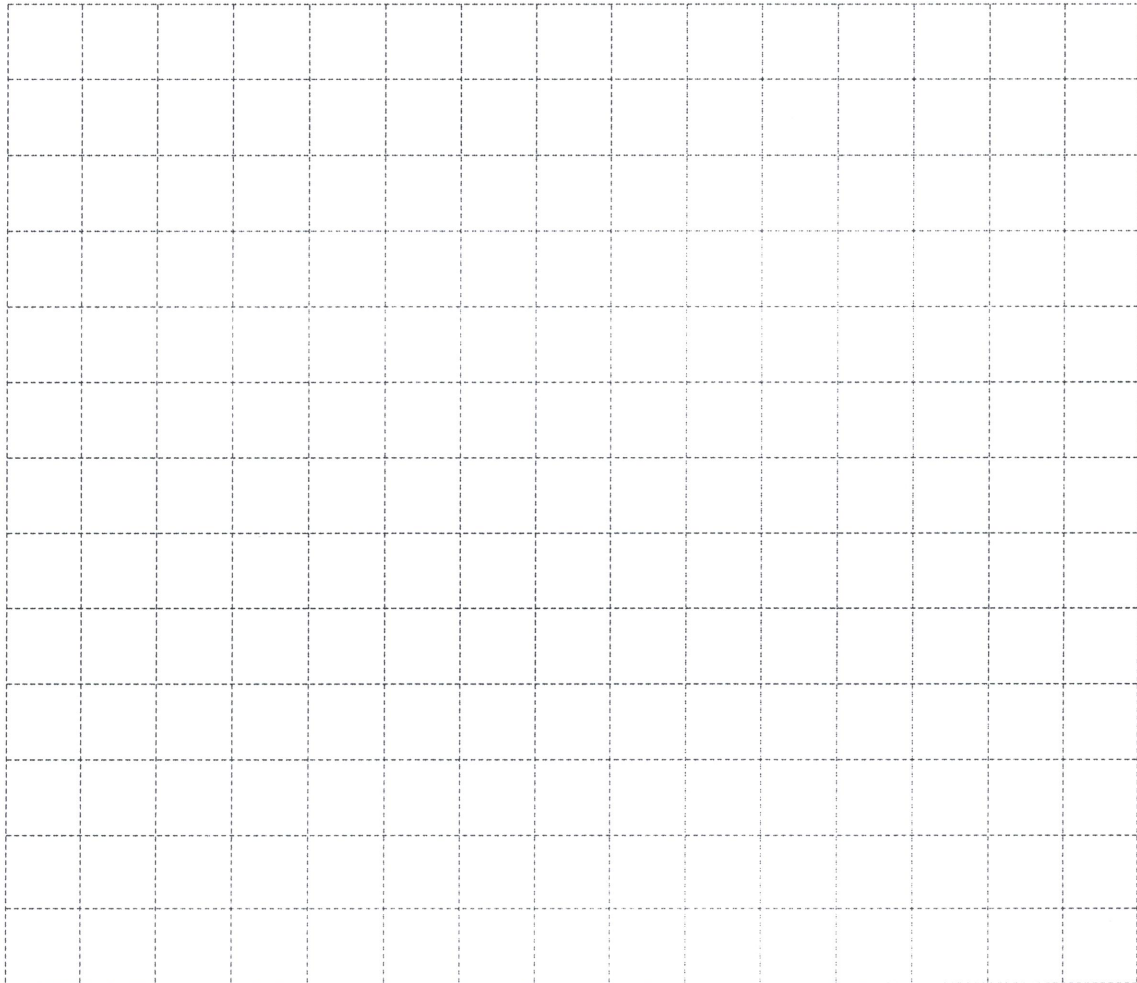
..... $\leq m <$ [2]

- (d) Each marble is a sphere of diameter 3 cm.

On the grid, draw an accurate net of the smallest closed box a marble can fit in.



NOT TO
SCALE



[2]

- 21** (i) Use the information in the pie chart to complete the frequency table for the 288 students.

For
Examiner's
Use

Number of points	0	1	2	3
Number of students				

[2]

- (ii) Calculate the mean number of points.

Answer(d)(ii) [3]

- (e) One student is chosen at random.

Find the probability that this student scored

- (i) 3 points,

Answer(e)(i) [1]

- (ii) at least 1 point,

Answer(e)(ii) [2]

- (iii) more than 3 points.

Answer(e)(iii) [1]

- (f) 1440 students took part in the same quiz.

How many students would be expected to score 3 points?

Answer(f) [1]