MEGA LECTURE

Percentages

Question Paper 7

Level	IGCSE
Subject	Maths (0580)
Exam Board	Cambridge International Examinations (CIE)
Paper Type	Extended
Topic	Number
Sub-Topic	Percentages
Booklet	Question Paper 7

Time Allowed: 57 minutes

Score: /47

Percentage: /100

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%

1 **(a)** **(i)** In a camera magazine, 63 pages are used for adverts.
The ratio   number of pages of adverts : number of pages of reviews $= 7:5$.

Calculate the number of pages used for reviews.

Answer(a)(i) .... [2]

(ii) In another copy of the magazine, 56 pages are used for reviews and for photographs.
The ratio   number of pages of reviews : number of pages of photographs $= 9:5$.

Calculate the number of pages used for photographs.

Answer(a)(ii) .... [2]

(iii) One copy of the magazine costs $4.90 .
An annual subscription costs $48.80 for 13 copies.

Calculate the percentage discount by having an annual subscription.

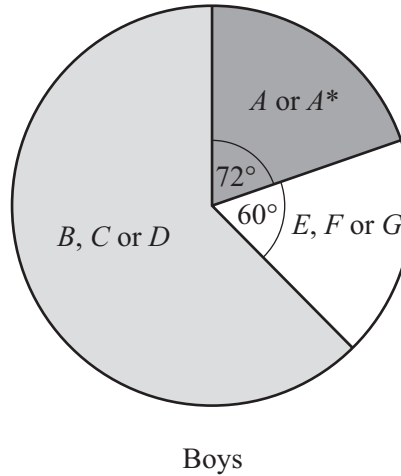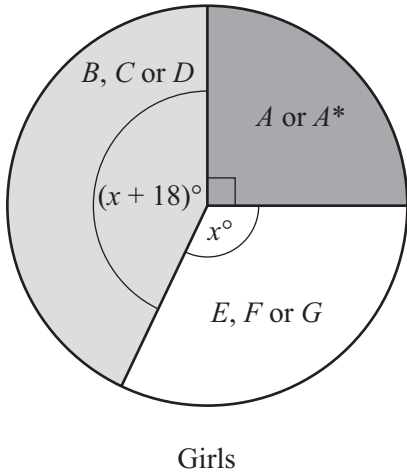*Answer(a)*(iii) .... % [3]

(b) In a car magazine, 25% of the pages are used for selling second-hand cars,
$62\frac{1}{2}$% of the **remaining** pages are used for features,
and the other 36 pages are used for reviews.

Work out the total number of pages in the magazine.

Answer(b) .... [4]

2

Girls   Boys

The pie charts show information on the grades achieved in mathematics by the girls and boys at a school.

(a) For the **Girls'** pie chart, calculate

    (i) x,

Answer(a)(i) $x =$ .... [2]

    (ii) the angle for grades B, C or D.

Answer(a)(ii) .... [1]

(b) Calculate the percentage of the **Boys** who achieved grades E, F or G.

Answer(b) .... % [2]

(c) There were 140 girls and 180 boys.

    (i) Calculate the percentage of students (girls and boys) who achieved grades A or $A*$.

Answer(c)(i) .... % [3]

(ii) How many more boys than girls achieved grades *B*, *C* or *D*?

Answer(c)(ii) .... [2]

(d) The table shows information about the times, *t* minutes, taken by 80 of the girls to complete their mathematics examination.

Time taken (*t* minutes)	$40 < t \leqslant 60$	$60 < t \leqslant 80$	$80 < t \leqslant 120$	$120 < t \leqslant 150$
Frequency		14	29	32

(i) Calculate an estimate of the mean time taken by these 80 girls to complete the examination.

Answer(d)(i) .... min [4]

(ii) On a histogram, the height of the column for the interval $60 < t \leqslant 80$ is 2.8 cm.

Calculate the heights of the other three columns.
Do not draw the histogram.

Answer(d)(ii) $40 < t \leqslant 60$ column height = ... cm

$80 < t \leqslant 120$ column height = ... cm

$120 < t \leqslant 150$ column height = ... cm [4]

3   A factory produces bird food made with sunflower seed, millet and maize.

(a) The amounts of sunflower seed, millet and maize are in the ratio

   sunflower seed : millet : maize = 5 : 3 : 1.

(i) How much millet is there in 15 kg of bird food?

Answer(a)(i) .... kg [2]

(ii) In a small bag of bird food there is 60 g of sunflower seed.

   What is the mass of bird food in a small bag?

Answer(a)(ii) .... g [2]

(b) Sunflower seeds cost $204.50 for 30 kg from Jon's farm or €96.40 for 20 kg from Ann's farm.
The exchange rate is $1 = €0.718.

Which farm has the cheapest price per kilogram?
You must show clearly all your working.

Answer(b) .... [4]

(c) Bags are filled with bird food at a rate of 420 grams per second.

How many 20 kg bags can be **completely** filled in 4 hours?

Answer(c) .... [3]

(d) Brian buys bags of bird food from the factory and sells them in his shop for $15.30 each.
He makes 12.5% profit on each bag.

How much does Brian pay for each bag of bird food?
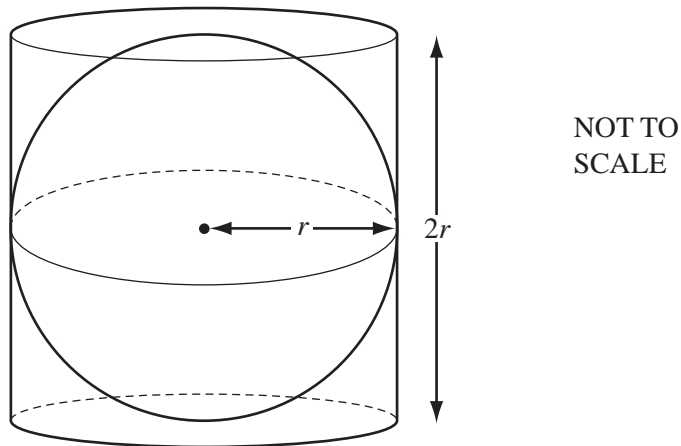
Answer(d) $ .... [3]

(e) Brian orders 600 bags of bird food.

The probability that a bag is damaged is $\dfrac{1}{50}$.

How many bags would Brian expect to be damaged?

Answer(e) .... [1]

4

NOT TO
SCALE

The sphere of radius r fits exactly inside the cylinder of radius r and height $2r$.
Calculate the percentage of the cylinder occupied by the sphere.

[The volume, V, of a sphere with radius r is $V = \dfrac{4}{3}\pi r^3$.]

Answer .... % [3]