Cambridge O Level

Cambridge International Examinations
Cambridge Ordinary Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

* 4 7 8 4 3 9 9 2 2 2 *

COMMERCIAL STUDIES **7101/21**

Paper 2 Arithmetic **October/November 2016**

2 hours

Candidates answer on the Question Paper.

Additional Materials: Electronic calculator
Ruler

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces provided above.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions in **Section A** and any **two** questions from **Section B**.

All working must be clearly shown in the space provided and should be done on the same sheet as the rest of the answer.
The businesses described in this Question Paper are entirely fictitious.
You may use a calculator in this examination.
N.B. £1 = 100p.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **16** printed pages.

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CAMBRIDGE International Examinations

[Turn over

Section A (76 marks)

Answer **all** questions in this section.

1 Calculate

(a) $6.9 - 8.5 \times 3.2$,

Answer (a) ....[2]

(b) $\frac{3}{7}$ of \$88.60 giving your answer to the nearest cent,

Answer (b) \$ ....[2]

(c) $1.78 \div 126.3$ giving your answer to 3 significant figures.

Answer (c) ....[2]

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2 Find

(a) the simple interest on an investment of £60 500 for 5 years at a rate of 3.2% a year,

Answer (a) £ ....[3]

(b) the value of an investment of \$28 900 after 3 years in a savings account paying an annual compound interest rate of 1.78%.

Answer (b) \$ ....[4]

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3 **(a)** An investor owns 6500 shares in a company. He receives a dividend of £2080.

Calculate the amount of dividend per share.

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

(b) The investor researches exchange rates for pounds (£) into euros (€).
He finds the following exchange rates available for £1.

0.82	0.83	0.83	0.815	0.825	0.81	0.83	0.815	0.83	0.83

Write down the mode.

Answer (b) ....€ [1]

(c) The investor exchanges his dividend of £2080 for euros at an exchange rate of £1 = 0.83 euros.

How many euros does he receive?

Answer (c) ....€ [2]

4 **(a)** A retailer purchased £9500 worth of goods from a wholesaler.
She received a 20% trade discount and then a 3% cash discount.

How much did she pay for the goods?

Answer (a) £ .... [4]

(b) The retailer employs an assistant who is paid £8.60 per hour for 38 hours a week.
Sometimes she works extra hours for which she is paid 1½ times the usual rate.
One week she works a total of 45 hours.

Calculate her gross pay for this week's work.

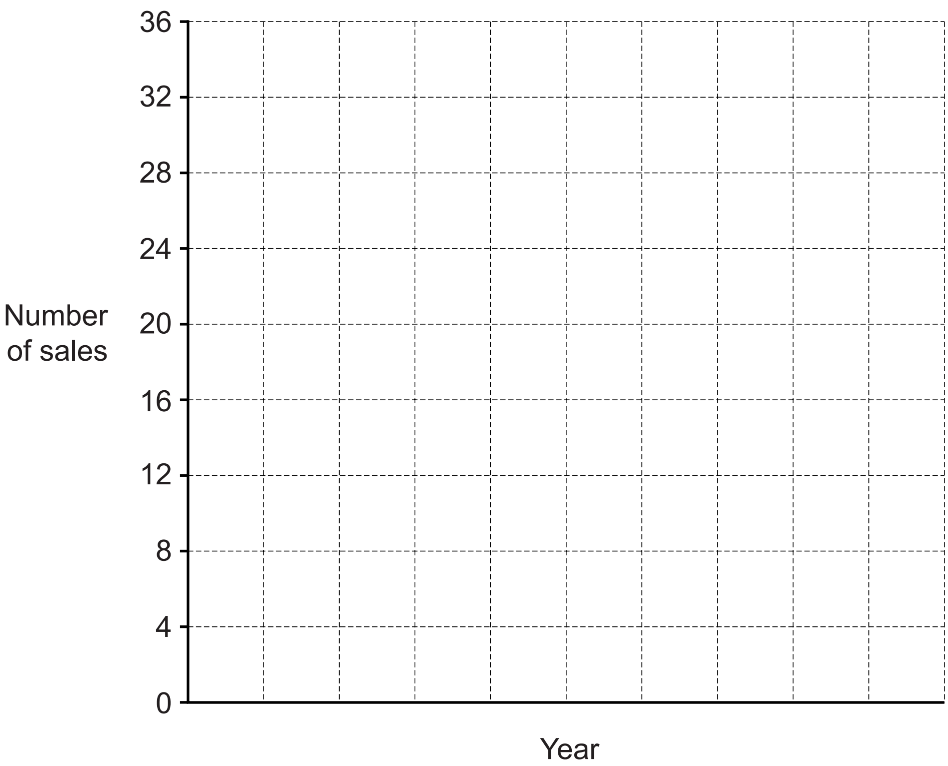
Answer (b) £ .... [6]

5 The table below shows the annual number of sales made by a property agent over a five-year period.

Year	2011	2012	2013	2014	2015
Number of sales	18	16	22	24	30

On the grid below draw a bar chart to show this data.

PROPERTY SALES



[5]

6 A retailer's opening hours are shown in the table below.

Day	Opening times	
Monday	8 am to 1.30 pm	2.30 pm to 5.30 pm
Tuesday	8 am to 1.30 pm	2.30 pm to 5.30 pm
Wednesday	8 am to 1.30 pm	2.30 pm to 5.30 pm
Thursday	8 am to 1.30 pm	CLOSED
Friday	8 am to 1.30 pm	2.30 pm to 5.30 pm
Saturday	9 am to 1 pm	CLOSED
Sunday	10 am to 12 noon	CLOSED

For how many hours is the retailer open each week?

Answer .... [8]

7 Anne, an antique dealer, paid £740 for a bookcase at an auction.
In addition she had to pay the auction house a commission of 12.5% on the sale.

Anne then had the bookcase repaired.
She paid for 5 hours work at £15.50 per hour, plus £10 for materials.

She sold the bookcase for £1173.

Calculate her percentage profit.

Answer ....% [7]

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8 Mary is intending to buy a computer. The cash price of the computer is $580.

To buy the computer on credit requires a deposit of 12½% of the cash price and 12 monthly payments of $48.

Calculate the difference between the cash price and the credit price.

Answer $ .... [5]

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9 **(a)** Mr Spence flies from Cape Town to London where he exchanges 20 000 Rands for pounds at a rate of £1 = 17.45 Rands. No commission is payable.

How many pounds does he receive? Give your answer to the nearest pound.

Answer (a) £ .... [3]

(b) In London Mr Spence hires a car.
The car hire charges are shown in the table below.

Car Type	£ per day
Small	48
Medium	68
Large Saloon	106
Large Estate	171

The daily charge is for the first day of hire.
Additional days are charged at 75% of the daily rate. There is no mileage charge.
Mr Spence hires a medium car for 5 days.

Calculate the total hire charge.

Answer (b) £ .... [4]

10 **(a)** The price paid for fuel depends on three components:

- fuel duty
- production costs
- delivery and retail costs

These are in the ratio 16 : 10 : 1 respectively.

If a litre of fuel costs 135 cents, how much of this is production costs?

Answer (a) .... cents [4]

(b) Fuel duty changes annually in line with the Retail Price Index (RPI).
In 2015 the RPI was 185.6 while in 2014 the RPI was 164.

If the fuel duty on a litre of fuel was 58 cents in 2015, what was the fuel duty on a litre of fuel in 2014?

Answer (b) .... cents [3]

11 **(a)** Stella was quoted buildings insurance at 0.3% of value.
Her house is valued at $220 000.

Calculate the premium payable.

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

(b) Stella was quoted contents insurance at 0.12% of value.
Her contents are valued at $50 000.

Calculate the premium payable.

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

(c) Her insurance company offers her a 5% discount on the total annual premium if she takes both buildings and contents insurance.

She will get a further 4% reduction on the discounted price if she pays by monthly direct debit.

Calculate her monthly payment if she takes both insurances and pays by monthly direct debit.

Answer (c) $ .... [5]

Section B (24 marks)

Answer any **two** questions from this section.

12 The world production of tin in 2015, which was produced in three regions of the world, is shown in the table below.

Region	Percentage
Asia /Australia	$83\frac{1}{3}$
South America	$13\frac{1}{3}$
Europe	$3\frac{1}{3}$

(a) A pie chart was drawn to show this data. Use the data in the table to calculate the pie chart angle for Asia/Australia.

Answer (a) .... ° [3]

(b) South America produced 51 000 tonnes of tin in 2015.

Calculate the total world production of tin, in tonnes, in 2015.

Answer (b) .... tonnes [3]

(c) Tin can be extracted from gravel which contains 0.015% tin.

How many tonnes of tin can be extracted from 40 000 tonnes of gravel?

Answer (c) .... tonnes [3]

(d) The price of tin, in $ per tonne, over a period of 6 months is as follows.

22 000 22 250 23 250 23 350 23 300 23 250

Calculate the mean price over the six month period.

Answer (d) ....$/tonne [3]

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13 (a) An airline uses an aircraft for transporting a mixture of both passengers and freight.

The empty aircraft weighs 75 000 kg.
The aircraft fuel weighs 52 000 kg.

The aircraft carries a maximum of 145 passengers plus 5 crew.
Their mean weight per person is taken to be 90 kg.

The total weight allowed for the aircraft at take-off is 157 000 kg.

If the aircraft had a full load of passengers, crew and fuel, how many tonnes of freight can it carry?

Answer (a) ....tonnes [5]

(b) The aircraft has a fuel load of 52 000 kg.

A litre of fuel weighs 0.8 kg.

Calculate the fuel load in litres.

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

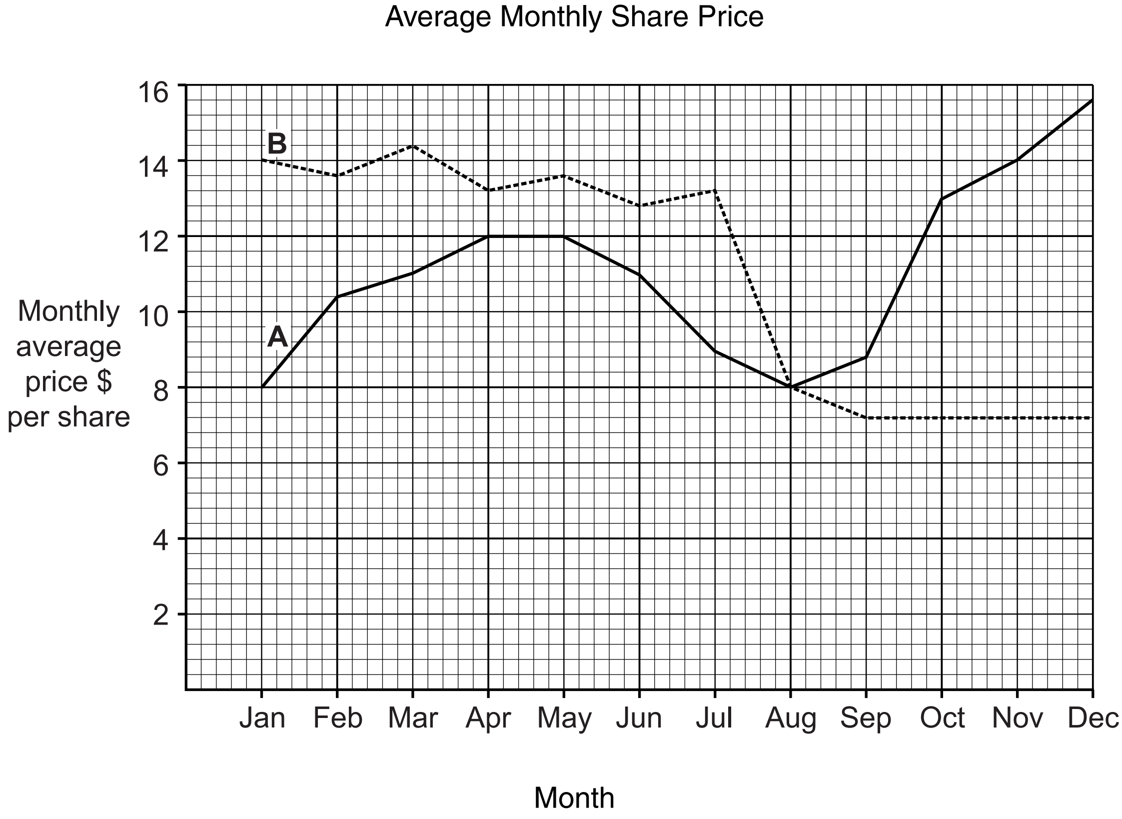
(c) The aircraft took off at 09 40 to fly to its destination, in the same time zone, a distance of 896 km.

Its average speed for this flight was 640 km/hr.

At what time did it arrive at its destination?

Answer (c) .... [5]

14 The graph below shows the average monthly share price over a year for two companies; Company A (solid line) and Company B (dotted line).



Use the graph to answer part (a) and part (b).

(a) In what month are the average monthly share prices for each company equal?

Answer (a) .... [1]

(b) Calculate the percentage increase in the average monthly price of Company A shares from July to December.

Answer (b) ....% [6]

(c) An investor bought 650 Company B shares in April at \$13.20 each and sold them in November at \$7.20 each.

The broker charged a commission of 1% for each transaction.

Calculate the investor's loss.

Answer (c) \$ .... [5]

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15 (a) A company salesman earns a basic annual salary of £20 000 plus commission of 5¼% on sales. His sales total was £88 000 in a year.

Calculate his total gross annual income.

Answer (a) £ .... [4]

(b) An office worker has a gross salary of £1800 per month.

The first £8500 of annual gross income is not taxed.
The next £3000 is taxed at 12% and the remainder at 20%.

Calculate the net annual income of the office worker.

Answer (b) £ .... [8]