

Cambridge IGCSE

MATHEMATICS

0606 - P4

2020 - 2024

QUESTIONS + ANSWERS

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1 - (0580/41_Summer_2020_Q1) - Simple And Compound Interest , Percentages, Ratio And Proportion

(a) In 2018, Gretal earned \$32 000.

(i) She paid tax of 24% on these earnings.

Work out the amount she paid in tax in 2018.

\$ [2]

(ii) In 2019, Gretal's earnings increased by 7%.

Work out her earnings in 2019.

\$ [2]

(b) Gretal invests \$5000 at a rate of 2% per year compound interest.

Calculate the value of her investment at the end of 3 years.

\$ [2]

(c) One month, Gretal spent a total of \$360 on presents.

She spent $\frac{1}{5}$ of this total on presents for her parents.

She spent $\frac{2}{3}$ of the remaining money on presents for her friends.

She spent the rest of the money on presents for her sisters.

Calculate the percentage of the \$360 that she spent on presents for her sisters.

..... % [4]

- (d) Arjun earned \$36 515 in 2019.
This was an increase of 9% on his earnings in 2018.

Work out his earnings in 2018.

\$ [2]

- (e) Arjun and Gretal each pay rent.

In 2018, the ratio of the amount each paid in rent was Arjun : Gretal = 5 : 7.

In 2019, the ratio of the amount each paid in rent was Arjun : Gretal = 9 : 13.

Arjun paid the same amount of rent in both 2018 and 2019.

Gretal paid \$290 more rent in 2019 than she did in 2018.

Work out the amount Arjun paid in rent in 2019.

\$ [4]

2 - (0580/42_Summer_2020_Q1) - Percentages, Ratio And Proportion, Simple And Compound Interest

- (a) (i) Divide \$24 in the ratio 7 : 5.

\$, \$ [2]

- (ii) Write \$24.60 as a fraction of \$2870.
Give your answer in its lowest terms.

..... [2]

- (iii) Write \$1.92 as a percentage of \$1.60 .

..... % [1]

- (b) In a sale the original prices are reduced by 15%.

- (i) Calculate the sale price of a book that has an original price of \$12.

\$ [2]

- (ii) Calculate the original price of a jacket that has a sale price of \$38.25 .

\$ [2]

- (c) (i) Dean invests \$500 for 10 years at a rate of 1.7% per year simple interest.

Calculate the total interest earned during the 10 years.

\$ [2]

- (ii) Ollie invests \$200 at a rate of 0.0035% **per day** compound interest.

Calculate the value of Ollie's investment at the end of 1 year.

[1 year = 365 days.]

\$ [2]

- (iii) Edna invests \$500 at a rate of $r\%$ per year compound interest.
At the end of 6 years, the value of Edna's investment is \$559.78 .

Find the value of r .

$r =$ [3]

3 - (0580/43_Summer_2020_Q1) - *Ratio And Proportion, Percentages***(a)**

Campsite fees (per day)	
Tent	\$15.00
Caravan	\$25.00

The sign shows the fees charged at a campsite.
Today there are 54 tents and 18 caravans on the site.

Calculate the fees charged today.

\$ [2]

- (b)** In September the total income at the campsite was \$37 054.
This was a decrease of 4.5% on the total income in August.

Calculate the total income in August.

\$ [2]

- (c)** The visitors to the campsite today are in the ratio

men : women = 5 : 4 and women : children = 3 : 7.

- (i)** Calculate the ratio men : women : children in its simplest form.

..... : : [2]

- (ii)** Today there are 224 children at the campsite.

Calculate the total number of men and women.

..... [3]

- (d) The space allowed for each tent is a rectangle measuring 8 m by 6 m, each correct to the nearest metre.

Calculate the upper bound for the area of the space allowed for each tent.

..... m^2 [2]

- (e) The value of the campsite has increased exponentially by 1.5% every year since it opened 30 years ago.

Calculate the value of the campsite now as a percentage of its value 30 years ago.

..... % [2]

ANSWERS

1 - (0580/41_Summer_2020_Q1) - Simple And Compound Interest , Percentages, Ratio And Proportion

(a)(i)	7680	2	M1 for $0.24 \times 32\,000$ oe
(a)(ii)	34 240	2	M1 for $32\,000 \times \frac{100+7}{100}$ oe
(b)	5306.04	2	M1 for $5000 \times \left(1 + \frac{2}{100}\right)^3$ oe
(c)	26.7 or 26.66... to 26.67	4	B3 for 96 or $\frac{96}{360}$ oe OR M3 for $\left(1 - \frac{1}{5}\right) \times \left(1 - \frac{2}{3}\right) \times 100$ oe or M2 for $\left(1 - \frac{1}{5}\right)$ and $\left(1 - \frac{2}{3}\right)$ oe OR M1 for $360 \div 5 [\times 4]$ oe M1 for <i>their</i> $288 \div 3 [\times 2]$
(d)	33 500	2	M1 for $36\,515 \div \frac{100+9}{100}$ oe
(e)	6525	4	M3 for $\left(\frac{65}{45} - \frac{63}{45}\right)[A] = 290$ oe or M2 for $\left(\frac{13}{9} - \frac{7}{5}\right)[A] = 290$ oe or M1 for correct attempt to convert to a common ratio value for Arjun or for $\frac{13}{9} - \frac{7}{5}$ oe

2 - (0580/42_Summer_2020_Q1) - Percentages, Ratio And Proportion, Simple And Compound Interest

(a)(i)	14, 10	2	M1 for $24 \div (7 + 5)$
(a)(ii)	$\frac{3}{350}$	2	B1 for correct fraction not in lowest terms
(a)(iii)	120	1	
(b)(i)	10.2[0]	2	M1 for $\frac{15}{100} \times 12$ oe or better
(b)(ii)	45	2	M1 for $\frac{38.25}{1 - \frac{15}{100}}$ oe
(c)(i)	85	2	M1 for $\frac{500 \times 1.7 \times 10}{100}$ oe
(c)(ii)	203 or 202.5 to 202.6	2	M1 for $200 \times \left(1 + \frac{0.0035}{100}\right)^{365}$
(c)(iii)	1.9	3	M2 for $\sqrt[6]{\frac{559.78}{500}}$ or M1 for $500 \left(1 + \frac{r}{100}\right)^6 = 559.78$

3 - (0580/43_Summer_2020_Q1) - Ratio And Proportion, Percentages

(a)	1260	2	M1 for $15 \times 54 + 25 \times 18$
(b)	38 800	2	M1 for $37054 \div \left(1 - \frac{4.5}{100}\right)$ oe
(c)(i)	15 : 12 : 28	2	M1 for correct attempt to find a common multiple for the women oe
(c)(ii)	216	3	M2 for $224 \div \text{their } 28 \times \text{their } (15 + 12)$ or M1 for $224 \div \text{their } 28$
(d)	55.25	2	M1 for $8 + 0.5$ or $6 + 0.5$ seen
(e)	156 or 156.3...	2	M1 for $\left(1 + \frac{1.5}{100}\right)^{30}$