MATHEMATICS

P3

2017 - 2023
QUESTIONS + ANSWERS

MATHEMATICS 0580

TOPICAL PAST PAPER WORKSHEETS

2017 - 2023 | Questions + Mark scheme

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1 - (0580/31_Summer_2017_Q1) - *Ratio And Proportion, Percentages, Linear Equaetion*

Camilla joins a soccer club.
The total cost of joining is made up of membership, kit and travel.

(a)   The ratio   membership : kit : travel = 3 : 5 : 6.
The cost of membership is $78.

    (i)   Show that the total cost of joining is $364.

[1]

    (ii)   Calculate the cost of the kit and the cost of the travel.

Kit = $ ....

Travel = $ .... [3]

(b)   Camilla's father pays $\frac{10}{13}$ of the $364.
Camilla pays the rest.

Calculate how much she pays.

$ .... [2]

(c)   Camilla's brother joins the soccer club.
He receives a 12% discount on the $364 because he is younger than Camilla.

Calculate the total cost of joining for him.

$ .... [2]

(d)   During the year, Camilla's team played 24 matches.
The table gives some information about the results of these matches.

Played	Won	Drawn	Lost
24	W	6	L

(i)   Write down an equation, in terms of W and L, for the number of matches played.

.... [1]

(ii)   Points are given when a team wins or draws a match.

The points are
Match won   3 points
Match drawn   1 point
Match lost   0 points.

The team has a total of 54 points.

Write down an equation, in terms of W, for the total points given.

.... [1]

(iii)   Work out the value of W and the value of L.

$W =$ ....

$L =$ .... [3]

2 - (0580/31_Summer_2017_Q6) - *Speed,distance And Time*

Eduardo goes to the Theatre.
He leaves his house at twenty-five minutes to six in the evening.

(a)   Write down this time using the 24-hour clock.

.... [1]

(b)   He travels to the Theatre by bus.
Part of the timetable is shown below.

Belmont Road	1740	1815	1850
Railway Station	1747	1820	1857
Leisure Centre	1759	1834	1907
Theatre	1805	1840	1912
Bus Station	1816	1848	1922

It takes Eduardo 16 minutes to walk to the Railway Station from his house.

(i)   Find the time he arrives at the Railway Station.

.... [1]

(ii)   He gets on the next bus to the Theatre.

Find the time he arrives at the Theatre.

.... [1]

(iii)   The 1850 bus from Belmont Road takes the least time to travel to the Bus Station.

Work out how many minutes quicker this journey is than the journey on the 1740 bus.

.. min [2]

(iv)   The distance from Belmont Road to the Bus Station is 8.5 km.

Calculate the average speed for the bus leaving Belmont Road at 1740.
Give your answer in kilometres per hour, correct to 1 decimal place.

.... km/h [4]

3 - (0580/31_Summer_2017_Q8) - *Trigonometry, Speed,distance And Time*

The scale drawing shows the positions of Bogota (*B*) and Quito (*Q*).
The scale is 1 centimetre represents 150 kilometres.
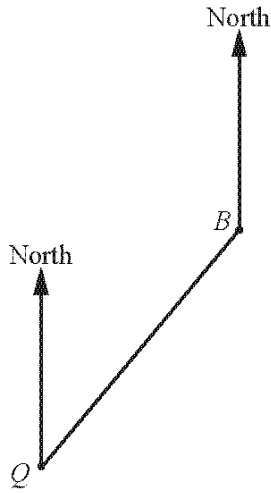
Scale: 1 cm to 150 km

(a)   **(i)**   Measure the length of the line *BQ*.

.... cm [1]

(ii)   Work out the actual distance from Bogota to Quito.

.... km [1]

(iii)   Measure the bearing of Quito from Bogota.

.... [1]

(b)   A plane leaves Quito and flies straight to Manaus.
Manaus is 2100 km on a bearing of 100° from Quito.

On the scale drawing, mark the position of Manaus (*M*).   [3]

(c) The plane flies the 2100 km from Quito to Manaus at an average speed of 550 km/h.

Calculate the time taken for this flight

(i) in hours, correct to 3 significant figures,

.... h [2]

(ii) in hours and minutes, correct to the nearest minute.

.... h .... min [1]

4 ▪ (0580/31_Summer_2017_Q9) ▪ *Number Facts, Percentages*

Francesca owns a business.
One year she has a total of $6000 to spend on rent, furniture and office equipment.

(a) **(i)** The rent is $400 per month.

Work out how much Francesca spends on rent in this year.

$ .... [1]

(ii) Desks cost $58.50 each and chairs cost $15 each.
Francesca buys 2 desks and 5 chairs.

Work out how much Francesca spends on furniture.

$ .... [2]

(iii) Francesca also spends $800 on office equipment.

Work out how much remains of the $6000.

$ .... [2]

(iv) She spends this remaining amount on boxes of paper.
Paper costs $4.95 per box.

Work out how many boxes she buys.

.... boxes [2]

(b) Francesca needs to buy computer equipment.
She borrows $2000 from a bank for 3 years at a rate of 5% per year compound interest.

Calculate the total amount she pays back at the end of the 3 years.

$ .... [3]

5 - (0580/32_Summer_2017_Q1) - *Percentages*

Here is part of the menu in a café.

Item	Price
Tea.......................	$2.40
Coffee.................	$2.80
Fruit juice............	$1.85
Pizza...................	$4.15
Vegetable pasty...	$3.60
Chicken curry......	$5.20
Ice cream............	$2.80
Cake	$3.25
Yoghurt	$1.40

(a) Jenna buys 3 coffees and 2 cakes.

Work out how much she spends altogether.

$ .... [3]

(b) Find the maximum number of pizzas Harry can buy for $20.
Work out the change he receives from a $20 note.

Number of pizzas = ...

Change = $ .... [3]

(c) Priti's meal costs $7.60 .
She gives the waitress 15% extra for service.

Work out the total amount she pays.

$ .... [2]

(d) Elena and Maria are waitresses in the café.
One day they receive $96 for service.
They share the $96 in the ratio   Elena : Maria = 3 : 1.

Work out how much Elena receives.

$ .... [2]

(e) The café's opening hours are shown below.

Day	Opening hours
Monday	CLOSED
Tuesday	1100 to 1500 and 1700 to 2200
Wednesday	1100 to 1500 and 1700 to 2200
Thursday	1100 to 1500 and 1700 to 2200
Friday	1100 to 1500 and 1700 to 2200
Saturday	1030 to 2300
Sunday	0930 to 2100

(i) Find the number of hours the café is open during one week.

.... hours [2]

(ii) During opening hours the café needs 3 people on duty.
Each person works 36 hours in a week.

Find the number of people the café needs in a week.

.... [3]

(f) The café owner pays rent.
The **monthly** rent is $6.40 for each square metre of floor area.
The floor area is $72.5 \, m^2$.

Calculate the **total** rent the café owner pays in one year.

$ .... [3]

ANSWERS

1 - (0580/31_Summer_2017_Q1) - *Ratio And Proportion, Percentages, Linear Equaetion*

(a)(i)	$78 \div 3 \times (3 + 5 + 6)$ [= 364]
(a)(ii)	[kit] 130 [travel] 156
(b)	84
(c)	320.32 final answer
(d)(i)	$W + 6 + L = 24$ oe
(d)(ii)	$3W + 6 = 54$ isw
(d)(iii)	[W=] 16
	[L=] 2

2 - (0580/31_Summer_2017_Q6) - *Speed,distance And Time*

(a)	17 35
(b)(i)	17 51
(b)(ii)	18 40 cao
(b)(iii)	4 nfww
(b)(iv)	14.2 cao

3 - (0580/31_Summer_2017_Q8) - *Trigonometry, Speed,distance And Time*

(a)(i)	4.4
(a)(ii)	660
(a)(iii)	220
(b)	14 [cm] from Q
	100° from Q
(c)(i)	3.82 cao
(c)(ii)	3[h] 49[min]

4 - (0580/31_Summer_2017_Q9) - *Number Facts, Percentages*

(a)(i)	4800
(a)(ii)	192
(a)(iii)	208
(a)(iv)	42
(b)	2315.25 cao

5 - (0580/32_Summer_2017_Q1) - *Percentages*

(a)	14.9[0]
(b)	4
	3.4[0]
(c)	8.74
(d)	72
(e)(i)	60
(e)(ii)	5 nfww
(f)	5568

6 - (0580/32_Summer_2017_Q4) - *Number Facts, Rational And Irrational Numbers*

(a)(i)	36
(a)(ii)	4
(a)(iii)	11
(a)(iv)	36 or 4 or both
(a)(v)	27
(b)	160 cao
(c)(i)	8.3
(c)(ii)	27

7 - (0580/33_Summer_2017_Q2) - *Standard Form*

(a)	12 756 000
(b)	160
(c)	1.496×10^8
(d)(i)	0.0001
(d)(ii)	0.1 oe