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4MA1 June 2027 Paper 1F Best Guess Paper

Foundation · Target Grade 5 · Model Answers

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This independently compiled practice paper is for students preparing for Pearson Edexcel International GCSE Mathematics A (4MA1), Foundation Tier, Paper 1F. A calculator may be used.

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Revise the full specification. Attempt the matching question paper before using the mark scheme, model answers and practice resources at www.mygrade9mathstutor.com.

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Model Answers

Step-by-step worked answers.

Use with the matching question paper.

Calculator allowed · 29 questions · 100 marks · Suggested time: 2 hours.

Paper 1F · Foundation · Target Grade 5 · Model Answers

Question 1 · Place value and rounding · 4 marks

Part (a)

47 082 = 47 000 + 82.

Answer: Forty-seven thousand and eighty-two

Part (b)

Compare thousandths: 49, 400, 405, 415, 450, in ascending order.

Answer: 0.049, 0.4, 0.405, 0.415, 0.45

Part (c)

6384 is at least 6350 and less than 6450, so it rounds to 6400.

Answer: 6400

Part (d)

The hundredths digit is 6, so round the tenths digit from 8 up to 9.

Answer: 17.9

Question 2 · Multiples, factors, squares and cubes · 4 marks

Part (a)

$8 \times 4 = 32$.

Answer: 32

Part (b)

$36 \div 12 = 3$. Also, $36 \div 6 = 6$ and $36 \div 9 = 4$.

Answer: 12 (also 6 or 9)

Part (c)

$7^2 = 49$ and $3^2 = 9$.

Answer: 49 (also 9)

Part (d)

$3^3 = 27$.

Answer: 27

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Question 3 · Two-way tables and probability · 4 marks

Part (a)

Girls who prefer rugby: $19 - 14 = 5$. Boys who prefer tennis: $18 - 12 = 6$.

Boys who prefer football: $32 - 14 - 6 = 12$.

Girls total: $60 - 32 = 28$. Football total: $12 + 11 = 23$.

	Rugby	Football	Tennis	Total
Boys	14	12	6	32
Girls	5	11	12	28
Total	19	23	18	60

Answer: Boys: 12 football, 6 tennis. Girls: 5 rugby, 28 total. Football total: 23.

Part (b)

12 out of the 60 students are girls who prefer tennis: $\frac{12}{60} = \frac{1}{5}$.

Answer: $\frac{1}{5}$

Question 4 · Units and elapsed time · 3 marks

Part (a)

Multiply by 100: $3.4 \times 100 = 340$.

Answer: 340 cm

Part (b)

Divide by 1000: $2650 \div 1000 = 2.65$.

Answer: 2.65 kg

Part (c)

From 14:35 to 15:35 is 1 hour. From 15:35 to 15:52 is 17 minutes.

Answer: 1 hour 17 minutes

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Question 5 · Simplifying and substitution · 4 marks

Part (a)

Collect like terms: $(5 - 2)a + (3 + 7)b$.

Answer: $3a + 10b$

Part (b)

$T = 4 \times 6 - 3 \times (-2) = 24 + 6$.

Answer: $T = 30$

Question 6 · Range and median · 3 marks

Part (a)

Largest − smallest = 6.1 − 3.5 = 2.6.

Answer: 2.6 kg

Part (b)

Order the masses: 3.5, 4.2, 4.9, 5.4, 5.8, 5.8, 6.1.

The fourth of seven values is the median.

Answer: 5.4 kg

Question 7 · Angles in an isosceles triangle · 3 marks

Angles ABC and ACB are equal because AB = AC.

Angles in a triangle sum to 180°, so angle ACB = (180° − 44°) ÷ 2 = 68°.

Angles ACB and ACD sum to 180° on a straight line, so angle ACD = 180° − 68°.

Answer: 112°

Question 8 · Percentage discount · 4 marks

Notebooks: 3 × £2.45 = £7.35. Pens: 4 × £1.30 = £5.20.

Total before discount: £7.35 + £5.20 = £12.55.

Rachel pays 100% − 15% = 85%. £12.55 × 0.85 = £10.6675, which rounds to £10.67.

Answer: £10.67

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Question 9 · Simplifying and sharing ratios · 4 marks

Part (a)

Divide 24 and 36 by 12.

Answer: 2 : 3

Part (b)

There are $4 + 5 = 9$ equal parts. Each part is £360 ÷ 9 = £40.

Maia gets 5 parts and Sam gets 4, so the difference is one part.

Answer: £40

Question 10 · Area of a trapezium · 3 marks

Use area $= \frac{1}{2} \times$ (sum of parallel sides) $\times$ height.

$72 = \frac{1}{2} \times (7 + 11) \times h = 9h$. Divide by 9.

Answer: 8 cm

Question 11 · Laws of indices · 3 marks

Part (a)

When multiplying powers of p, add the indices: $6 + 4 = 10$.

Answer: p^{10}

Part (b)

Cube both factors: $3^3 \times q^3$.

Answer: $27q^3$

Part (c)

When dividing powers of r, subtract the indices: $4 - 9 = -5$.

Answer: r^{-5}

Question 12 · Changing the subject · 2 marks

Add h to both sides: $v + h = kr$.

Divide both sides by k, assuming $k \neq 0$.

Answer: $r = \frac{v + h}{k}$

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Question 13 · Prime factorisation · 2 marks

$124 = 2 \times 62$. Then $62 = 2 \times 31$, and 31 is prime.

Answer: $2 \times 2 \times 31$

Question 14 · Multiplying mixed numbers · 3 marks

Convert both mixed numbers: $3\frac{1}{5} = \frac{16}{5}$ and $2\frac{5}{8} = \frac{21}{8}$.

$\frac{16}{5} \times \frac{21}{8} = \frac{42}{5}$ after cancelling $16 \div 8 = 2$.

$42 = 8 \times 5 + 2$, so $\frac{42}{5} = 8\frac{2}{5}$.

Answer: $8\frac{2}{5}$ shown

Question 15 · Probability and ratio · 3 marks

Total counters: $54 \div 0.45 = 120$.

Blue and yellow probability: $1 - 0.15 - 0.45 = 0.40$, so there are $120 \times 0.40 = 48$ blue or yellow counters.

Blue is 3 of the 8 ratio parts: $48 \times \frac{3}{8} = 18$.

Answer: 18 blue counters

Question 16 · Upper and lower bounds · 2 marks

Part (a)

Half of 0.1 m is 0.05 m. The upper bound is $1.6 + 0.05$; it is not included.

Answer: 1.65 m

Part (b)

The lower bound is $1.6 - 0.05$; it is included.

Answer: 1.55 m

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Question 17 · Expanding, factorising and inequalities · 6 marks

Part (a)

Expand: $6x - 15 - 2x - 8$. Then collect like terms.

Answer: $4x - 23$

Part (b)

The highest common factor is $6ab$. Dividing the two terms by it gives $3a$ and $-2b$.

Answer: $6ab(3a - 2b)$

Part (c)

Subtract $2y$ and add 3: $3y > 15$.

Divide by positive 3, so the inequality direction stays the same.

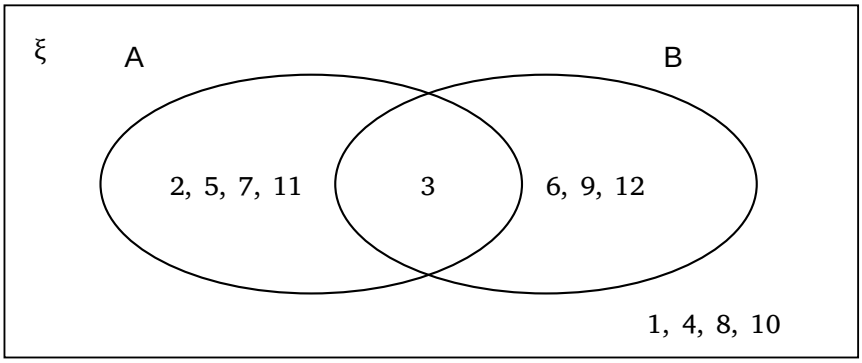
Answer: $y > 5$

Question 18 · Venn diagrams and probability · 4 marks

Part (a)

The primes are 2, 3, 5, 7 and 11; the multiples of 3 are 3, 6, 9 and 12.

Put 3 in the overlap. Place each remaining number in its single region.



Answer: A only: 2, 5, 7, 11. Both: 3. B only: 6, 9, 12. Outside: 1, 4, 8, 10.

Part (b)

The union counts the overlap once: $4 + 1 + 3 = 8$ of the 12 numbers. $\frac{8}{12} = \frac{2}{3}$.

Answer: $\frac{2}{3}$

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Question 19 · Arithmetic sequences · 4 marks

Part (a)

The difference is 4, so start with $4n$. At $n = 1$, add 3 to make 7.

Answer: $4n + 3$

Part (b)

$4n + 3 = 87$, so $4n = 84$ and $n = 21$.

Since 21 is a positive integer, 87 occurs in the sequence.

Answer: 87 is the 21st term

Question 20 · Grouped frequency tables · 4 marks

Part (a)

The greatest frequency is 14, in the interval $20 < h \leq 30$.

Answer: $20 < h \leq 30$

Part (b)

The class midpoints are 15, 25, 35 and 45.

Multiply by frequencies: $15 \times 8 = 120$, $25 \times 14 = 350$, $35 \times 12 = 420$ and $45 \times 6 = 270$.

Estimated total $= 120 + 350 + 420 + 270 = 1160$. Estimated mean $= 1160 \div 40$.

Answer: 29 cm

Question 21 · Linear equation with a fraction · 4 marks

Multiply both sides by 4: $7x - 2 = 4(3x + 1)$.

Expand: $7x - 2 = 12x + 4$.

Collect terms: $-5x = 6$. Divide by -5.

Answer: $x = -\frac{6}{5}$

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Question 22 · Rotation and translation · 4 marks

Part (a)

The right-angle vertex $(-4, 9)$ maps to $(4, 5)$; the upper horizontal side turns to point down.

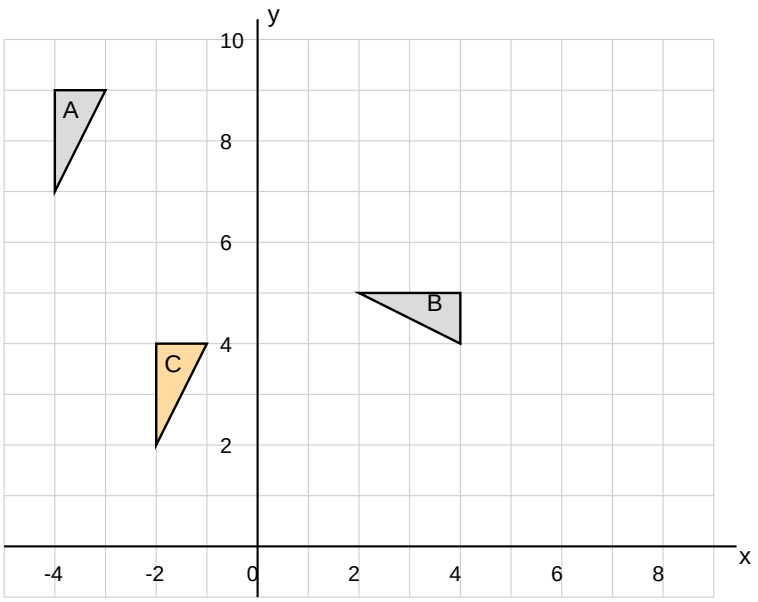
From $(-2, 3)$ to $(-4, 9)$, the displacement is $(-2, 6)$. A 90° clockwise turn gives $(6, 2)$, landing at $(4, 5)$.

The same turn maps $(-3, 9)$ to $(4, 4)$ and $(-4, 7)$ to $(2, 5)$.

Answer: 90° clockwise rotation about $(-2, 3)$

Part (b)

Add 2 to each x-coordinate and subtract 5 from each y-coordinate.



Answer: C: $(-2, 4)$, $(-1, 4)$, $(-2, 2)$

Question 23 · Converting speed units · 2 marks

90 km = 90 000 m, and 1 hour = 3600 seconds.

90 000 ÷ 3600 = 25.

Answer: 25 m/s

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Question 24 · Ratio and mass · 4 marks

One part $= 180 \div (7 + 5) = 15$ bags.

Small bags: $7 \times 15 = 105$. Large bags: $5 \times 15 = 75$.

Total mass $= 105 \times 65 + 75 \times 145 = 6825 + 10\,875 = 17\,700$ g.

17 700 g $= 17.7$ kg, which is greater than 17 kg, so Zoe is not correct.

Answer: No; 17.7 kg is needed

Question 25 · Total surface area of a cylinder · 4 marks

Use $V = \pi r^2 h$: $h = \dfrac{1100}{\pi \times 5.4^2} \approx 12.0076$ cm.

Total area = two circular ends + curved surface $= 2\pi(5.4)^2 + 2\pi(5.4)h$.

Using the unrounded height gives approximately 590.6251 cm^2, which is 591 cm^2 to 3 significant figures.

Answer: 591 cm^2

Question 26 · Area of a semicircular path · 3 marks

Outer radius $= 12 \div 2 = 6$ m. Inner radius $= 6 - 2 = 4$ m.

Subtract the semicircle areas: $\dfrac{1}{2}\pi(6^2 - 4^2) = \dfrac{1}{2}\pi(36 - 16)$.

Answer: 10π m^2

Question 27 · Equation of a straight line · 3 marks

Gradient $= \dfrac{17 - 5}{6 - 2} = \dfrac{12}{4} = 3$.

Substitute (2, 5) into $y = 3x + c$: $5 = 6 + c$, so $c = -1$.

Answer: $y = 3x - 1$

Question 28 · Simultaneous equations · 3 marks

Multiply the first equation by 3: $9x + 6y = 42$.

Multiply the second by 2: $10x - 6y = 34$.

Add to get $19x = 76$, so $x = 4$.

Substitute into the first equation: $12 + 2y = 14$, so $y = 1$.

Answer: $x = 4$, $y = 1$

Question 29 · Similar triangles and sightlines · 4 marks

Above eye level the tree rises $2 - 1.6 = 0.4$ m and the mountain rises $400 - 1.6 = 398.4$ m.

The sightline forms similar right triangles. Their horizontal distances from Katie are in the same ratio as the rises.

$$\text{Katie to mountain} = 15 \times \frac{398.4}{0.4} = 14\,940 \text{ m.}$$

Subtract Katie's 15 m to the tree: $14\,940 - 15$.

Answer: 14 925 m