Ma

KEY STAGE
2

LEVEL
6

2015

Mathematics tests

Mathematics mark schemes

Paper 1 and Paper 2

National curriculum tests

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Introduction

The Standards and Testing Agency (STA) is responsible for the development and delivery of statutory tests and assessments. STA is an executive agency of the Department for Education.

This booklet contains the mark schemes for the assessment of level 6 mathematics. Level threshold tables will be available at www.gov.uk/sta from Tuesday 7 July, 2015.

The level 6 mathematics test is made up of 2 papers. A total of 50 marks is available.

- **Paper 1:** non-calculator paper (24 marks)
- **Paper 2:** calculator paper (26 marks)

There is no mental mathematics paper in the level 6 test.

As in previous years, external markers will mark the key stage 2 national curriculum tests. The mark schemes are made available to teachers after the tests have been taken.

The mark schemes were written and developed alongside the questions. Pupils' responses from trialling have been added as examples to the mark schemes to ensure they reflect how pupils respond to the questions. The mark schemes indicate the criteria on which judgements should be made. In applying these principles, markers use professional judgement based on the training they have received.

A number of questions in both papers contain elements of using and applying mathematics. These are not referenced explicitly in the mark scheme.

The mathematics test mark schemes

The marking information for each question is set out in the form of tables, which start on page 10 of this booklet.

The '**Question**' column on the left-hand side of each table provides a quick reference to the question number and the question part.

The '**Requirement**' column may include 2 types of information:

- a statement of the requirements for the award of each mark, with an indication of whether credit can be given for correct working; and
- examples of some different types of correct response.

The '**Mark**' column indicates the total number of marks available for each question part.

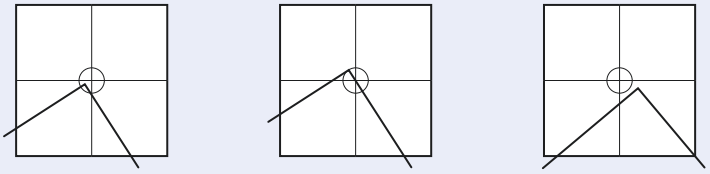
The '**Additional guidance**' column indicates alternative acceptable responses, and provides details of specific types of response that are unacceptable. Other guidance, such as the range of acceptable answers, is provided as necessary. The '!' is used to indicate responses that are not presented conventionally but are awarded 1 or more marks in recognition of pupils' mathematical understanding at this age.

Applying the mark schemes

To ensure consistency of marking, the most frequent queries about applying the mark schemes are listed on pages 4 and 5 along with the action the marker will take. This is followed by further guidance on pages 6 and 7 relating to the marking of questions that involve money, time and other measures. Specific guidance on marking responses involving coordinates, probability and algebra is given on pages 8 and 9. Unless otherwise specified in the mark schemes, markers will apply these guidelines in all cases.

General guidance in marking the level 6 mathematics tests

What if…	Marking procedure	
The pupil's response is numerically or algebraically equivalent to the answer in the mark scheme.	Markers will award the mark unless the mark scheme states otherwise.	
The pupil's response does not match closely any of the examples given.	Markers will use their judgement in deciding whether the response corresponds with the statement of the requirements given in the 'Requirement' column. Reference will also be made to the 'Additional guidance' column and, if there is still uncertainty, markers will contact the supervising marker.	
The pupil has responded in a non-standard way.	Calculations, formulae and written responses do not have to be set out in any particular format. Pupils may provide evidence in any form as long as its meaning can be understood. Diagrams, symbols or words are acceptable for explanations or for indicating a response. Any correct method of setting out working, however idiosyncratic, will be accepted.	
There appears to be a misreading affecting the working.	This is when the pupil misreads the information given in the question and uses different information without altering the original intention or difficulty level of the question. For each misread that occurs, 1 mark only will be deducted.	
No answer is given in the expected place, but the correct answer is given elsewhere.	Where a pupil has shown understanding of the question, the mark(s) will be given. In particular, where a word or number response is expected, a pupil may meet the requirement by annotating a graph or labelling a diagram elsewhere in the question.	
The pupil's answer is correct, but the wrong working is shown.	A correct response will always be marked as correct.	
The response in the answer box is wrong, but the correct answer is shown in the working.	Where appropriate, detailed guidance will be given in the mark schemes, which markers will follow. If no guidance is given, markers will examine each case to decide whether: • the incorrect answer is due to a transcription error • the pupil has continued to give redundant extra working which does not contradict work already done • the pupil has continued to give redundant extra working which does contradict work already done.	 If so, the mark **will** be awarded. If so, the mark **will** be awarded. If so, the mark **will not** be awarded.

What if…	Marking procedure
The correct response has been crossed out and not replaced.	Any legible crossed-out work that has not been replaced will be marked according to the mark scheme. If the work is replaced, then crossed-out work will not be considered.
More than 1 answer is given.	If all answers are correct (or a range of answers is given, all of which are correct), the mark will be awarded, unless prohibited by the mark scheme. If both correct and incorrect responses are given, no mark will be awarded.
The answer is correct but, in a later part of the question, the pupil has contradicted this response.	A mark given for 1 part will not be disallowed for working or answers given in a different part, unless the mark scheme specifically states otherwise.
The pupil has drawn lines which do not meet at the correct point.	Markers will interpret the phrase 'slight inaccuracies in drawing' to mean 'within or on a circle of radius 2 mm with its centre at the correct point'.  within the circle accepted on the circle accepted outside the circle **not** accepted

Recording marks awarded

Marking will take place on screen with markers viewing scanned images of pupils' scripts. Marks should be input on screen in accordance with the guidance given on the use of the on-screen marking software.

For multiple-mark questions, markers will record the award of 3, 2, 1 or 0 as appropriate, according to the mark-scheme criteria. There will be provision in the software to record questions not attempted (N/A: not attempted).

The software will aggregate mark totals automatically.

Further details on recording marks and the use of the on-screen system will be given at marker training.

Marking specific types of question: summary of additional guidance

Responses involving money

	Accept	Do not accept
Where the £ sign is given for example: £3.20, £7 £	£3.20 £7 £7.00 Any unambiguous indication of the correct amount, eg: £3.20p £3 20 pence £3 20 £3,20 £3-20 £3:20	Incorrect placement of pounds or pence, eg: £320 £320p Incorrect placement of decimal point or incorrect use or omission of 0, eg: £3.2 £3 200 £32 0 £3-2-0
Where the p sign is given for example: 40p p	40p Any unambiguous indication of the correct amount, eg: £0.40p	Incorrect or ambiguous use of pounds or pence, eg: 0.40p £40p
Where no sign is given for example: £3.20, 40p	£3.20 40p 320p £0.40 Any unambiguous indication of the correct amount, eg: £3.20p £0.40p £3 20 pence £.40p £3 20 £.40 £3,20 40 £3-20 0.40 £3:20 3.20 320 3 pounds 20	Incorrect or ambiguous use of pounds or pence, eg: £320 £40 £320p £40p £3.2 0.4 3.20p 0.40p

Responses involving time

	Accept	Do not accept
A time interval for example: 2 hours 30 minutes	2 hours 30 minutes Any unambiguous, correct indication, eg: $2\frac{1}{2}$ hours 2.5 hours 2h 30 2h 30 min 2 30 150 minutes 150 Digital electronic time, ie: 2:30	Incorrect or ambiguous time interval, eg: 2.30 2-30 2,30 230 2.3 2.3 hours 2.3h 2h 3 2.30 min
A specific time for example: 8:40am, 17:20	8:40am 8:40 twenty to nine Any unambiguous, correct indication, eg: 08.40 8.40 0840 8 40 8-40 8,40 Unambiguous change to 12- or 24-hour clock, eg: 17:20 as 5:20pm or 17:20pm	Incorrect time, eg: 8.4am 8.40pm Incorrect placement of separators, spaces etc or incorrect use or omission of 0, eg: 840 8:4:0 8.4 084

Responses involving measures

	Accept	Do not accept
Where units are given (eg: kg, m, l) for example: 8.6kg kg	8.6kg Any unambiguous indication of the correct measurement, eg: 8.60kg 8.6000kg 8kg 600g	Incorrect or ambiguous use of units, eg: 8600kg

Responses involving coordinates

	Accept	Do not accept
Responses involving coordinates for example: (5, 7)	Unconventional notation, eg: (05, 07) (five, seven) x y (5, 7) ($x = 5$, $y = 7$)	Incorrect or ambiguous notation, eg: (7, 5) y x (7, 5) ($5x$, $7y$) (5^x, 7^y) ($x - 5$, $y - 7$)

Responses involving probability

	Accept	Do not accept
A numerical probability should be expressed as a decimal, fraction or percentage only for example: 0.7 $\frac{7}{10}$ 70%	Equivalent decimals, fractions and percentages, eg: 0.7000 $\frac{70}{100}$ $\frac{35}{50}$ 70.0% A probability correctly expressed in 1 acceptable form, which is then incorrectly converted or incorrectly expressed, but is less than 1 and greater than 0, eg: $\frac{70}{100} = \frac{18}{25}$ $\frac{70}{100} = 7\%$ $\frac{70}{100}$ is 7:10	The following categories should not be credited if given as the final answer to a question. However, in a multiple-mark question, sight of these can be awarded partial credit in an otherwise correct method. ! Probability that is incorrectly expressed, eg: 7 in 10 7 over 10 7 out of 10 7 from 10 ! Fraction with non-integers in the numerator and/or denominator. ! Probability expressed as a percentage without a percentage sign. ! Probability expressed as a ratio, eg: 7 : 10, 7 : 3, 7 to 10 In a multiple-part question, do not award the mark for the *first* occurrence of each category if unaccompanied by an acceptable response; award the mark for subsequent occurrences.

Responses involving algebra

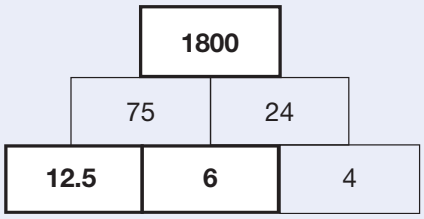
	Accept	Do not accept
Responses involving algebra for example: $2 + n$ $n + 2$ $2n$ $\frac{n}{2}$ n^2	Unambiguous use of a different case or variable, eg: N used for n x used for n	! Unconventional notation, eg: $n \times 2$, or $2 \times n$, or $n2$, or $n + n$ for $2n$ $n \times n$ for n^2 $n \div 2$, for $\frac{n}{2}$ or $\frac{1}{2}n$ $2 + 1n$ for $2 + n$ $2 + 0n$ for 2 Within a question that demands simplification, do not accept unconventional notation as part of a final answer involving algebra. Accept within a method when awarding partial credit, or within an explanation or general working.
		✗ Embedded values given when solving equations (since this provides insufficient indication that the pupil recognises the answer within the equation), eg: in solving $3x + 2 = 32$, $3 \times 10 + 2 = 32$ for $x = 10$ To avoid penalising the 2 types of error below more than once within each question, do not award the mark for the *first* occurrence of each type within each question. Where a question carries more than 1 mark, only the final mark should be withheld.
	Words used to precede or follow equations or expressions, eg: $t = n + 2$ tiles, or tiles = $t = n + 2$ for $t = n + 2$	! Words or units used within equations or expressions, eg: n tiles + 2 n cm + 2 Do not accept the above on its own. Ignore if accompanying an acceptable response.
	Unambiguous letters used to indicate expressions, eg: $t = n + 2$ for $n + 2$	✗ Ambiguous letters used to indicate expressions, eg: $n = n + 2$ for $n + 2$

Note

If a pupil leaves the answer box empty but writes the answer elsewhere on the page, then that answer must be consistent with the units given in the answer box and the conditions listed in the general guidance section (pages 4–9).

If a pupil changes the unit given in the answer box, then their answer must be equivalent to the correct answer using the unit they have chosen, unless otherwise indicated in the mark scheme.

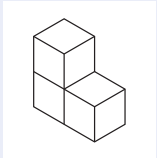
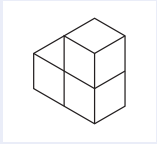
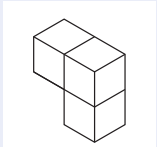
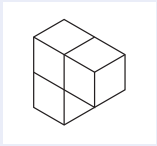
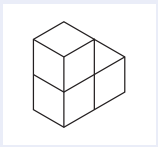
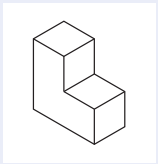
Paper 1: Calculator **not** allowed

Question	Requirement	Mark	Additional guidance
1a	4.9	1m	✓ ***Accept equivalent fractions and decimals***
1b	–0.5	1m	✓ $-\frac{1}{2}$
2	Gives a correct description that indicates the delivery cost is constant, eg: • The delivery cost is always £5 • The cost is always £5 no matter how much the toy costs • Delivery stays the same as the cost of toy increases	1m	✓ ***Minimally acceptable explanation,*** eg: • It is £5 ✓ ***Omission of the actual delivery cost,*** eg: • It always costs the same • The cost is the same • The cost of the toy does not affect the delivery cost ! ***Condone correct response with the pound sign omitted,*** eg: • It is always 5 ! ***Condone explanations which refer to toys costing up to £20*** ✗ ***Incomplete or ambiguous explanation,*** eg: • They are equal amounts
3	Gives the three correct numbers in their correct positions, ie:  	2m	✓ ***Unambiguous indication*** ✓ ***Equivalent fractions and decimals,*** eg: • accept $12\frac{3}{6}$ for 12.5
		or	
	Gives two correct numbers in their correct positions	1m	
4	Indicates all four correctly, ie: ✓ ✗ ✗ ✓	2m	! ***Incomplete response*** For 2 marks, do not accept any box left blank ! ***Other indication*** Accept any unambiguous indication, eg: • 'Y' for ticked
		or	
	Indicates any three correctly	1m	

Paper 1: Calculator **not** allowed

Question	Requirement	Mark	Additional guidance
5a	70	1m	✗ ***Incomplete processing,*** eg: • 95 – 25
5b	65	1m	✗ ***F***
6a	–140	1m	
6b	0.25 **or** $\frac{1}{4}$	1m	✓ ***Accept equivalent fractions or decimals*** ✗ ***Embedded solutions***
7a	Gives a correct explanation that recognises 3 of the 10 number cards are factors of 14, eg: • 1, 2 and 7 are factors of 14, so it is three out of ten	1m	! ***Minimally acceptable explanation:*** factors listed without a probability, eg: • 1, 2 and 7 ! ***Condone explanations that indicate that 1, 2 and 7 are the only factors of 14*** ! ***Incomplete explanation with numbers indicated on cards*** If the cards 1, 2 and 7 and no others are indicated on the diagram, award 1 mark for an incomplete explanation within the explain bubble ✗ ***Incomplete explanation,*** eg: • Three of the ten cards are a factor of 14 so the probability is three tenths • Three of the cards are factors
7b	Gives a number that has four of its factors between 1 and 10 inclusive, eg: • 6 • 50	1m	! ***Answers below 100 are as follows:*** 6, 8, 10, 16, 28, 32, 45, 50, 64, 66, 78 and 88

Paper 1: Calculator **not** allowed

Question	Requirement	Mark	Additional guidance
8	Draws a correct view of the new cuboid using the isometric grid, eg: •  •  •  • 	1m	✓ ***Lines not ruled or accurate*** Accept slight inaccuracies in drawing ✓ ***Alternative orientation,*** eg: •  ✓ ***Some or all internal lines omitted,*** eg: •  ! ***Some or all hidden lines drawn*** Do not accept unless hidden lines are dotted or otherwise shown as hidden ! ***Extended edges*** Condone ! ***Ignore incomplete drawings*** ✗ ***External lines omitted***
9	160 32 seen *(number who play tennis)* **OR** Shows or implies a complete correct method, eg: • 8 × 4 × 5 • 25% of tennis is 8 8 × 4 = 24 *(error)* tennis is 20% of sports club 24 × 5 = 120	**2m** ***or*** **1m**	✗ ***32% seen***
10	Sum completed using the correct three cards, ie: $\boxed{\frac{1}{4}} + \boxed{\frac{1}{5}} + \boxed{\frac{1}{20}} = \frac{1}{2}$	1m	! ***The correct three fractions may be given in any order*** ✓ ***Unambiguous indication,*** eg: • fractions joined to boxes • use of correct equivalent fractions or decimals or percentages which must be linked to the original fraction cards

Paper 1: Calculator **not** allowed

Question	Requirement	Mark	Additional guidance
11	15 6(cm) and 1.5(cm) seen (*the dimensions of the rectangle*) **OR** Shows or implies a complete correct method, eg: • $\sqrt{36} = 8$ (*error*) $8 \div 4 = 2$ $2 \times (8 + 2)$ • $6 \times 6 = 36$ $6 \div 4 = 1.2$ (*error*) $6 + 1.2 + 6 + 1.2$	**2m** ***or*** **1m**	✗ ***Confusion between area and perimeter, ie:*** • side of square is $36 \div 4 = 9$ (error) $2 \times (9 + 2.25)$
12	Completes all four rows of the table correctly, eg: 90° | **45°** | **45°** 80° | **90°** | **10°** 70° | **70°** | **40°** 70° | **55°** | **55°** ***or*** Completes three rows correctly	**2m** **1m**	✓ ***Angles within a row in either order*** ✓ ***The bottom two rows may be given in either order*** ! ***Condone omission of degree signs*** ! ***For 2 marks, do not accept correct angles in 3rd row repeated in 4th row, in either order***
13	Gives a correct explanation which demonstrates how the graph shows two children could be taller than Alfie, eg: • One person from the class is 160–169cm. But someone as well as this person could be taller than Alfie. 2 people range from 150–159cm, the other person could be 154, 155, etc	**1m**	✓ ***Minimally acceptable explanation,*** eg: • It could be 1.64, 1.56, Alfie • It depends on how tall the other person in his height group is • There could be someone between 150–159cm who is taller than Alfie ! ***Condone incorrect use of boundary values,*** eg: • One child is in the range 160cm–169cm. Don't know how tall the other child between 150 cm and 159 cm is ✗ ***Incomplete or incorrect explanation,*** eg: • There is 1 child in the range 150cm–159cm taller than Alfie • There could be two children taller than Alfie

Paper 1: Calculator **not** allowed

Question	Requirement	Mark	Additional guidance
14	14	2m	! *Algebra* See guidance (page 9)
		or	
	Shows or implies a correct first step of algebraic manipulation that either reduces the number of terms or collects variables on one side of the equation and numbers on the other, eg: • $2y + 12 = 40$ • $7y = 5y + 28$ • $7y - 5y = 40 - 12$ • $2y = 28$ • $28 \div 2$	1m	! ***Condone correct embedded solutions*** Award 1 mark, for a response which shows 14 as the embedded solution to their working, eg: • $7y + 12 = 5y + 40$ $(7 \times 14) + 12 = (5 \times 14) + 40$ $110 = 110$

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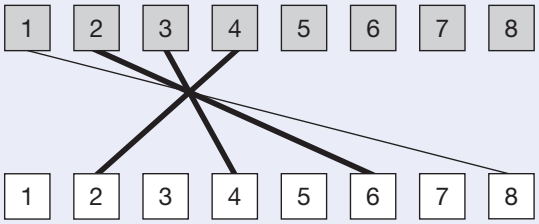
Paper 2: Calculator allowed

Question	Requirement	Mark	Additional guidance
1	Draws the three correct lines and no incorrect lines, ie:  Draws two correct lines and no incorrect lines **OR** Draws the three correct lines and one incorrect line	**2m** ***or*** **1m**	! ***Lines do not touch the shapes*** Accept provided the intention is clear
2a	£4.06	**1m**	! ***Money*** See guidance (page 6)
2b	200 Gives an answer of 180 or 184 or 184.4(…) **OR** Shows or implies a complete correct method, eg: • 1000 × 2.49 ÷ 13.50 • £13.50 ÷ £2.49 = 5.42 1000 ÷ 5.42 • 1350 ÷ 1000 = 1.35 249 ÷ 1.35 • £1.35 = 100 £2.70 = 200	**2m** ***or*** **1m**	! ***Measures*** See guidance (page 7) ! ***Inconsistent units*** Within an otherwise correct method, condone eg, for 1 mark accept: • (£)13.50 ÷ 1000 = 1.35(p) (£)2.49 ÷ 1.35(p) • (£)13.50 ÷ 1000 = (£)0.0135 249(p) ÷ (£)0.0135
3	Completes all 7 entries in the table correctly, ie: See table below Completes the first two rows (6M & 6P) correctly **OR** Completes the third row (6T) correctly	**2m** ***or*** **1m**	

	No.	Football	Netball	Hockey
6M	27	**7**	**7**	13
6P	33	**16**	9	**8**
6T	30	**5**	**10**	**15**

Paper 2: Calculator allowed

Question	Requirement	Mark	Additional guidance
4	35	2m	
		or	
	Shows or implies a complete correct method, eg: • (670 – 250) ÷ 12 • 670 = 250 + 12*n* 12*n* = 670 – 250 12*n* = 430 *(error)* *n* = 430 ÷ 12 = 25.8 *(error)*	1m	! ***Inconsistent units*** Within an otherwise correct method, condone eg, for 1 mark accept (£6.70 – 250) ÷ 12 ! ***Condone correct embedded solutions*** Award 1 mark, for a response which shows 35 as the embedded solution to their working
5a	Gives a correct probability, eg: • $\frac{1}{85}$ or $\frac{2}{170}$ • 0.012 or 0.011(…) • 1.2% or 1.1(…)%	1m	! ***Probability*** See guidance (page 8)
5b	Gives a correct probability, eg: • $\frac{1}{20}$ • 0.05 • 5%	1m	! ***Probability*** See guidance (page 8)
6	18	2m	! ***Measures*** See guidance (page 7)
		or	
	1728 seen (*the volume of the cube/cuboid*)	1m	
	OR		
	Shows or implies a complete correct method, eg: • 12 × 12 × 12 = 1440 *(error)* 1440 = 16 × 6 × height height = 1440 ÷ (16 × 6) = 15 • 12 × 12 × 12 ÷ 16 ÷ 6		

Paper 2: Calculator allowed

Question	Requirement	Mark	Additional guidance
7	Award marks as shown below for values of n and p which meet the following criteria:		

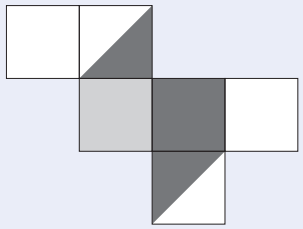
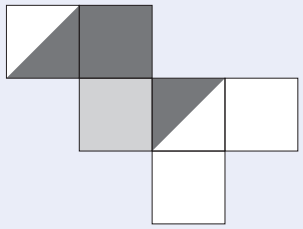
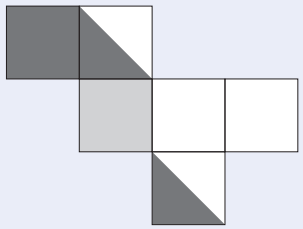
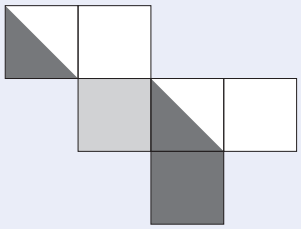
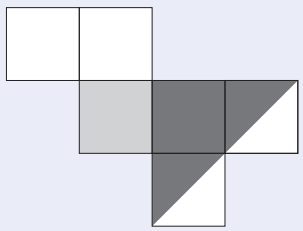
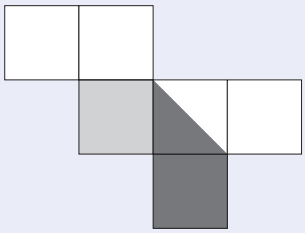
	n*:*p	
	2:3	**3:2**
n **is multiple of 5 and** ***p*** **is multiple of 6**	2 marks [A]	1 mark [C]
n **is multiple of 5 or** ***p*** **is multiple of 6**	1 mark [B]	0 marks

The following examples are worth 2 marks: • $n = 20$ **and** $p = 30$ [A] • $n = 80$ **and** $p = 120$ [A]	**2m**	! ***For 2m or 1m, accept multiple answers*** provided all meet the requirements for the mark(s) and are clearly distinguishable as separate answers, eg for 2 marks • $n = 20, 40, 60$ $p = 30, 60, 90$
or		
The following examples are worth 1 mark: • $n = 5$ **and** $p = 7.5$ [B] • $n = 10$ **and** $p = 15$ [B] • $n = 4$ **and** $p = 6$ [B] • $n = 90$ **and** $p = 60$ [C]	**1m**	
OR Shows or implies a method for rearranging $\frac{n}{p} = \frac{2}{3}$ which moves p from the denominator, eg: • $3n = 2p$ • $n = \frac{2p}{3}$		! ***For 1m, condone*** a list of at least five additional ratios or fractions equivalent to $\frac{2}{3}$ with none incorrect
OR Shows or implies a complete correct method, eg: • $2 \times 5 \times 6 : 3 \times 5 \times 6$		

Paper 2: Calculator allowed

Question	Requirement	Mark	Additional guidance
8	Gives a correct explanation, which demonstrates that the likelihood for 9 is greater than the likelihood for 3, eg: • There are only two ways to score 3 (2 + 1, 1 + 2), but there are more ways to score 9, eg 4 + 5, 5 + 4, 3 + 6 • Jack is incorrect because there are two ways of making 3 with those dice (1 + 2 and 2 + 1) but there are 4 ways of making 9 (3 + 6, 4 + 5, 5 + 4 and 6 + 3) • The probability of scoring 3 is $\frac{2}{36}$ but the probability of scoring 9 is $\frac{4}{36}$ • <table><tr><th>+</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th></tr><tr><td>1</td><td>2</td><td>(3)</td><td>4</td><td>5</td><td>6</td><td>7</td></tr><tr><td>2</td><td>(3)</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr><tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>(9)</td></tr><tr><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>(9)</td><td>10</td></tr><tr><td>5</td><td>6</td><td>7</td><td>8</td><td>(9)</td><td>10</td><td>11</td></tr><tr><td>6</td><td>7</td><td>8</td><td>(9)</td><td>10</td><td>11</td><td>12</td></tr></table>	1m	✓ ***Minimally acceptable explanation,*** eg: • 3 is $\frac{2}{36}$, 9 is $\frac{4}{36}$ • 3 has 2 ways, 9 has 4 ways • 1 + 2, 2 + 1 and 4 + 5, 5 + 4, 3 + 6 ! ***Reversals not considered*** Condone, provided a consistent approach is used for both totals, eg: • There is one way to make 3 and two ways to make 9 • 1 + 2, 4 + 5, 6 + 3 ! ***Incomplete explanation in explain bubble*** If the response in the explain bubble is incomplete and does not include any incorrect mathematics then working outside the bubble is considered ✗ ***Incomplete or incorrect explanation,*** eg: • 9 is more likely than 3 • There are more ways to make 9 than 3 • The probability of 3 is $\frac{1}{36}$ • There is only one way to score 3 ✗ ***Incorrect mathematics,*** eg: • The probability of 3 is $\frac{2}{12}$ and the probability of 9 is $\frac{4}{12}$ • 3 is 1 + 2 9 is 4 + 5, 6 + 3, 2 + 7, 8 + 1 • The probability of 9 is $\frac{2}{21}$ and 3 is $\frac{1}{21}$

Paper 2: Calculator allowed

Question	Requirement	Mark	Additional guidance
9	Shades three faces only, to complete the net correctly, ie: •  •  •  • 	2m	! ***Shape not shaded*** Accept any unambiguous identification provided the intention is clear
	or		
	Shades at least two faces correctly with no more than one face shaded incorrectly, eg: •  • 	1m	

Paper 2: Calculator allowed

Question	Requirement	Mark	Additional guidance
10a	400	**2m**	
		or	
	Shows or implies a complete correct method, eg:	**1m**	
	• 30% – 25% = 5% 5% = 20 100% = 20 × 20		
10b	111.6 **or** 112	**1m**	✗ 111
11	160	**2m**	! ***Measures*** See guidance (page 7)
		or	
	Shows or implies a complete correct method, eg:	**1m**	
	• 3 × 100 = 300 2 × 70 = 140 300 – 140		
12	1372	**3m**	✓ ***Condone the following that arise from other values of π*** • values between 1371 and 1380 inclusive • 2000 – 200π ✗ ***Throughout the question do not accept 3 as a value for π***
		or	
	628 seen *(area of semi-circle)* **OR**	**2m**	! ***Partial credit can be awarded for working in metres.*** ✓ ***Condone the following seen that arise from other values of π*** • values between 620 and 629 inclusive • 200π
	Shows or implies a complete correct method, eg: • Rectangle = 40 × 50 = 2000 Circle = 3.14 × 20^2 = 1256 Semi-circle = 1256 ÷ 2 = 623 *(error)* 2000 – 623		! ***The squaring must be interpreted correctly,*** eg: do not accept • circle = 3.14 × 20^2 = 125.6
		or	
	1256 seen *(area of circle)* **OR**	**1m**	! ***Partial credit can be awarded for working in metres.*** ✓ ***Condone the following seen that arise from other values of π*** • values between 1240 and 1257 inclusive • 400π
	A value between 743 and 760 inclusive seen *(area of whole circle subtracted from rectangle)* **OR**		✓ ***Condone 2000 – 400π***
	Shows or implies a correct method to find the area of the semi-circle, eg: • 3.14 × 400 ÷ 2		! ***The squaring must be interpreted correctly***

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