Q	Answer	Mark	Comments
1(a)	7	B1	condone ±7
	Additional Guidance		
	–7 only		B0

Q	Answer	Mark	Comments
1(b)	27	B1	

Q	Answer	Mark	Comments
1(c)	10^4	B1	
	Additional Guidance		
	1×10^4		B0
	Answer 4		B0

Q	Answer	Mark	Comments
2	16 × 3	M1	oe
	48	A1	accept 3 : 48 or 48 : 3

Q	Answer	Mark	Comments
3(a)	$1\frac{1}{2}$	B1	oe mixed number
	Additional Guidance		
	$1.5 = 1\frac{1}{2}$		B1
	$1\frac{1}{2} = 1.5$		B0

Q	Answer	Mark	Comments
3(b)	$\frac{2}{5}$ or 0.4	B1	oe
	Additional Guidance		
	Ignore attempt to simplify or convert if correct fraction seen		

Q	Answer	Mark	Comments
4(a)	1, 2, 4, 5, 10, 20	B2	any order B1 5 or 6 correct values with up to 2 incorrect values or 4 correct values with 0 or 1 incorrect values or 3 correct values with 0 incorrect values
	Additional Guidance		
	Allow values given in pairs eg 1 × 20, 2 × 10, 4 × 5 6 factors eg (2, 10), (4, 5)		 B2 B1
	Repeated values score max B1 eg 1, 2, 4, 5, 10, 10, 20 eg 1, 2, 2, 5		 B1 B1
	If a prime factor tree or similar is used then the factors must be identified		

Q	Answer	Mark	Comments
4(b)	One correctly evaluated counterexample	B1	eg 5 + 10 = 15 or 1 × 5 + 4 × 5 = 25 condone 0 as a multiple of 5
	Additional Guidance		
	One correctly evaluated counterexample seen amongst other trials		B1

Q	Answer	Mark	Comments
5	0.7 $\frac{3}{4}$ 80% with no incorrect working seen	B2	oe B1 at least one correct conversion comparable with another value SC1 reverse order with no incorrect working seen
	Additional Guidance		
	Condone missing percentage signs, eg allow 70 for 70%		
	Correct answer with no working shown		B2
	Accept equivalent forms to the given numbers on the answer line eg 70% 75 80% eg 70 75 80 eg 0.7 $\frac{3}{4}$ $\frac{8}{10}$ eg 7% 75% 80%		 B2 B2 B2 B1
	For B1, to be comparable, fractions must have the same denominator or numerator eg $\frac{7.5}{10}$ $\frac{8}{10}$ eg $\frac{3}{4}$ $\frac{8}{10}$ with no further correct work		 B1 B0

Q	Answer	Mark	Comments
6	2×4.5 or 9	M1	oe
	28.5 – their 9 or 19.5	M1dep	oe
	their $19.5 \div 3$ or 6.5	M1dep	oe dep on M2
	6.50 or 650p	A1	SC2 7.50 condone £6.50p
	Additional Guidance		
	Accept working in pence		
	SC2 is for using £4.50 as the cost of a scarf or interchanging the quantities		

Q	Answer	Mark	Comments
7(a)	80 children and 40 adults	B1	
	45 left (children) and 35 right (children)	B1	
	30 left (adults)	B1ft	ft 75 – their 45, where their 45 is an integer $\geqslant 0$ and answer an integer $\geqslant 0$
	10 right (adults)	B1ft	ft their 40 – their 30, where both integers are $\geqslant 0$ and answer an integer $\geqslant 0$
	Additional Guidance		
	Use of relative frequency or probability for an answer is B0 for that answer		
	Ignore working outside the frequency tree		

Q	Answer	Mark	Comments
7(b)	$\frac{9}{16}$	B2ft	ft their 45 and/or ft their 80 B1ft $\frac{\text{their 45}}{\text{their 80}}$ not fully simplified or correct simplification of their fraction, using numbers from their tree
	Additional Guidance		
	B2ft can only be awarded if their numbers can be simplified, otherwise B1ft		
	Do not ignore further work for B2 after correct answer seen $\frac{9}{16} = \frac{3}{4}$		B1

Q	Answer	Mark	Comments
8	Three from: • Vertical axis label missing • Horizontal axis label missing • Width of third bar too wide • Height of second bar incorrect	B3	B2 two bullets satisfied B1 one bullet satisfied
	Additional Guidance		
	Ignore irrelevant but non-contradictory statements		
	Check diagram for comments		
	First bullet Number of students label is missing / y-axis label is missing We don't know what the 0 10 20 stand for No frequency (label) or No label on the side	 B1 B1 B1	
	Second bullet No label for where students prefer to revise x-axis label missing or No label at the bottom	 B1 B1	
	Third bullet Bars not equal widths or Two bars are 5 wide and one bar is 7.5 wide Third bar wrong size, it's too wide/thick Third bar wrong or Third bar wrong size Third bar too big / double the width Bars are different sizes	 B1 B1 B0 B0 B0	
	Fourth bullet Second bar should be (one square) higher/taller Total should be 135 but chart is 133 Second bar is 66 or Second bar should be 68 Second bar is 63 but should be 68 Data for Home is wrong	 B1 B1 B1 B0 B0	
	Two marks may be scored in one sentence eg Home bar too short and In Class too wide	 B2	
	No vertical label and no horizontal label No label(s) / Hasn't labelled the chart	B2 B1	
	Three valid mistakes with one or more invalid mistakes	B2	

Q	Answer	Mark	Comments
9(a)	3 in left column	B1	
	5 in top row	B1	
	All products correct	B2ft	ft their 3 and their 5 B1ft 3 to 10 correctly evaluated products
	Additional Guidance		
	If their 3 is 0, 1 or 5, do not consider those products If their 5 is 0, 2, 3 or 7, do not consider those products		

Q	Answer	Mark	Comments
9(b)	$\frac{\text{their number of square numbers}}{\text{their number of completed cells}}$	B2ft	oe fraction ft their table even if incomplete B1ft their number of square numbers as a numerator or their number of completed cells as a denominator or square numbers identified on their grid or in working
	Additional Guidance		
	ft must produce a non-zero probability to score		
	Ignore attempt to simplify or convert if correct fraction seen		

Q	Answer	Mark	Comments
10(a)	$6m + 11$ or $11 + 6m$	B2	B1 $6m$ or (+)11
	Additional Guidance		
	Do not ignore further work for B2 eg $6m + 11 = 17m$ eg $6m + 3 = 9m$		 B1 B1

Q	Answer	Mark	Comments
10(b)	$3cd$ or $3dc$	B2	B1 3 or cd or dc
	Additional Guidance		
	$cd3$		B1
	Use of multiplication signs is max B1 eg $3 \times cd$ eg $c \times d$		 B1 B0
	$6\frac{1}{2}cd$ $\frac{1}{2}c6d$ $\frac{1}{2}c3d$		B1 B0 B0

Q	Answer	Mark	Comments
11	**Alternative method 1 – total cost then reduction**		
	55 × 6 or 330	M1	oe
	their 330 ÷ 10 or 33	M1dep	oe
	their 330 – their 33 or 297	M1dep	oe dep on M2 55 × 6 × 0.9 implies M3
	2.97 or 297p	A1	condone £2.97p
	Alternative method 2 – reduction then total cost		
	55 ÷ 10 or 5.5	M1	oe
	55 – their 5.5 or 49.5	M1dep	oe 55 × 0.9 implies M2
	their 49.5 × 6 or 297	M1dep	oe dep on M2
	2.97 or 297p	A1	condone £2.97p
	Alternative method 3 – buying 10% fewer bags		
	6 ÷ 10 or 0.6	M1	oe
	6 – their 0.6 or 5.4	M1dep	oe 6 × 0.9 implies M2
	their 5.4 × 55 or 297	M1dep	oe dep on M2
	2.97 or 297p	A1	condone £2.97p
	Additional Guidance		
	Working may be in £ or p or a mixture for up to M3 Ignore units for up to M3		
	Use the Alt that awards the best mark		
	Allow a maximum of one error in each build-up method		

Q	Answer	Mark	Comments
12	3	B1	

Q	Answer	Mark	Comments
13	Always true Sometimes true	B2	B1 one correct
	Additional Guidance		
	Accept any indication, but if a tick and crosses are used in the same row, mark the tick		
	A row with more than one tick is incorrect for that row		

Q	Answer	Mark	Comments
14(a)	Congruent shape drawn	B1	
	Additional Guidance		
	Mark intention but whole shape must be on the grid		
	Shape can be in any orientation		

Q	Answer	Mark	Comments
14(b)	Correct shape drawn	B2	B1 two or three correct sides or enlargement of the whole shape, with sf < 1 and sf $\neq \frac{1}{3}$
	Additional Guidance		
	Mark intention but whole shape must be on the grid		
	Shape can be in any position or orientation		

Q	Answer	Mark	Comments
15	**Alternative method 1 – Finding the value of one part first**		
	$35 \div (6 + 1)$ or 5	M1	oe
	$6 \times$ their 5 or 30 or $(6 - 1) \times$ their 5	M1dep	oe
	25	A1	
	Alternative method 2 – Finding the difference in the number of parts first		
	$6 - 1$ or 5	M1	oe
	$\frac{\text{their } 5}{6+1} \times 35$ or $\frac{5}{7} \times 35$	M1dep	oe
	25	A1	
	Additional Guidance		
	Allow a maximum of one error overall in build-up methods		

Q	Answer	Mark	Comments
16	Fully correct diagram	B2	B1 6 cm square (3 or 4 sides drawn) or 3 cm radius (semi) circle or radius half the length of their square and complete shape drawn
	Additional Guidance		
	Condone additional interior line(s)		
	Mark intention but whole shape must be on the grid		
	Shape may be in any orientation		

Q	Answer	Mark	Comments
17	**Alternative method 1**		
	Fully correct method	M2	eg 60 ÷ 5 × 4 M1 correct first step using one operator eg 5 ÷ 4 or 1.25
	48	A1	
	Alternative method 2		
	A correctly evaluated multiple of 4 miles in the same multiple of 5 minutes	M1	eg 8 (miles) in 10 (minutes)
	their multiple of 4 × (60 ÷ their multiple of 5)	M1dep	eg (4 × 2) × [60 ÷ (5 × 2)] or 8 × 6
	48	A1	
	Additional Guidance		
	Up to M2 may be awarded for multiple attempts if no answer chosen		
	For up to M2 ignore any units		
	Working may be in seconds, minutes or hours for up to M2		
	Allow one error in build-up methods in Alt 1		

Q	Answer	Mark	Comments
18	x-coordinate of L = 10 or y-coordinate of L = 8 or 10 marked on x-axis below L and 8 marked on y-axis left of L or (x-coordinate of M =) 5 + 5 + 5 or (y-coordinate of M =) 12 – 2 – 2 – 2 or 15 marked on x-axis below M or 6 marked on y-axis left of M	M1	oe
	(L) (10, 8) or (M) (15, …) or (…, 6) or 15 marked on x-axis below M and 6 marked on y-axis left of M	A1	condone missing brackets if intention is clear
	15, 6	A1	SC2 (6, 15)
	Additional Guidance		
	(10, 8 , 15, 6) (ie both sets of coordinates on answer line) correctly assigned to L and M previously		M1A1A1
	(10, 8 , 15, 6) on answer line not correctly assigned to L and M previously		M1A1A0
	Accept correct working on diagram and/or correct answer on diagram if not contradicted by answer line		

Q	Answer	Mark	Comments
19	1.5×1.5 or $\left(\frac{3}{2}\right)^2$	M1	oe oe improper fraction squared
	2.25 or $\frac{9}{4}$ or $2\frac{1}{4}$	A1	oe decimal, improper fraction or mixed number SC1 answer digits 225
	Additional Guidance		
	Ignore attempt to simplify or convert if correct fraction seen		
	Do not allow further work but condone adjusting place value eg $1.5 \times 1.5 = 2.25$, $2.25 \div 100 = 0.0225$ (adjusting place value) eg $1.5 \times 1.5 = 2.25$, 2.25×1.5 (cubing not squaring)		 M1A0 M0A0
	$1.5 \times 1.5 = 3$		M1A0
	2.25^2 225^2		M1A0 M0A0

Q	Answer	Mark	Comments
20(a)	$\times 4$ and $+5$ or $\div \frac{1}{4}$ and $+5$ or $+1.25$ and $\times 4$ or $+1.25$ and $\div \frac{1}{4}$	B1	oe decimals or fractions must be in correct order operator must be before number condone use of words
	Additional Guidance		
	$+3x$ and $+5$ (oe using the variable)		B0

Q	Answer	Mark	Comments
20(b)	– 8	B1	

Q	Answer	Mark	Comments
20(c)	$\div 6$ or $\times \frac{1}{6}$	B1	
	Additional Guidance		
	$-5x$		B0

Q	Answer	Mark	Comments
21	True True False	B3	B2 two correct B1 one correct
	Additional Guidance		
	Accept any indication, but if a tick and crosses are used in the same row, mark the tick		
	A row with more than one tick is incorrect for that row		

Q	Answer	Mark	Comments
22(a)	64	B1	

Q	Answer	Mark	Comments
22(b)	–4 and –13	B2	either order B1 first value –4 or second value –13 or second value = their first value – 9 SC1 –13 and –17

Q	Answer	Mark	Comments
23(a)	8	B1	

Q	Answer	Mark	Comments
23(b)	$3500 \div 20$ or $\frac{3500}{20}$	M1	oe eg $350 \div 2$
	175	A1	SC1 digits 175
	Additional Guidance		
	Ignore units		

Q	Answer	Mark	Comments
24	Correct conversion of or correct method to convert $1\frac{1}{5}$ to $\frac{12}{10}$ or $1\frac{2}{10}$ with no incorrect conversion of $\frac{3}{10}$ or correct method for or correct result of conversion of both fractions to a common denominator $\neq 10$ or $1 - \frac{1}{10}$ or $1.2 - 0.3$ or 0.9	M1	
	$\frac{9}{10}$	A1	oe fraction eg $\frac{45}{50}$
	Additional Guidance		
	Ignore attempt to simplify if correct fraction seen		
	$\frac{12}{10} - \frac{3}{10}$	M1	
	$\frac{12}{10} - \frac{6}{10}$	M0	

Q	Answer	Mark	Comments
25	1	B1	condone 1°

Q	Answer	Mark	Comments
26	12 ÷ 4 or 3	M1	oe may be on the diagram may be seen in a ratio
	$\pi \times$ their 3 $\times$ their 3 or 9π or [28.2, 28.3]	M1dep	oe
	$\pi \times 12 \times 12$ or 144π or [452.1, 452.45]	M1	oe
	135π	A1	SC2 135
	Additional Guidance		
	Condone eg $\pi 9$ for 9π		
	Condone use of $\frac{22}{7}$ or 3.1 or better for π up to M3		
	Answer 135 with 135π in working Answer 135 without 135π in working		M1M1M1A0 SC2
	Answer [423.8, 424.3]		M1M1M1A0

Q	Answer	Mark	Comments
27(a)	10×9 or 90 or $\frac{10}{15} \times 9$ or $9 \div \frac{15}{10}$ or correct time for any stated number of people other than 10	M1	oe eg 18 hours for 5 people
	6	A1	SC1 360 (minutes)
	Additional Guidance		
	M1 may be awarded for correct work with no answer or incorrect answer, even if this is seen amongst multiple attempts		
	Working may be seen in minutes eg $10 \times 9 \times 60$ or 5400		M1

Q	Answer	Mark	Comments
27(b)	It is not possible to say	B1	