

MARK SCHEME – LEVEL 1 – SET 27
MAT01

Question	Process	Mark	Skill Standard	Evidence
Q1(a)	Full process for percentage	1 or	A4	$0.2 \times 1300 (=260)$ oe Do not accept "20% of 1300" alone
	Correct answer with correct units	2	I6	£260 (correct units required- accept if given in answer box)
Q1(b)	Valid check	1	A5	E.g. reverse process or alternative method
Total marks for question		3		

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Question	Process	Mark	Skill Standard	Evidence
Q2	Considers constraints	1 or	R1	<p>A = 1 and C ≥ 2 and E ≥ 2 AND 2 of: B = A × 3.2 or D = C × 3.9 or F = E × 1.5</p> <p>OR 2 of: A = 1 and C ≥ 2 and E ≥ 2 AND B = A × 3.2 or D = C × 3.9 or F = E × 1.5 AND G = B + D + F</p>
	Develops solution	2 or	I6	<p>B = A × 3.2 and D = C × 3.9 and F = E × 1.5 AND G = B + D + F AND A ≥ 1 and C ≥ 2 and E ≥ 2</p> <p>OR</p> <p>A or C or E may be blank B = 3.2 and D = 7.8 and F = 7.5 and G = 18.5(0) OR B = 3.2 and D = 7.8 and F = 9 and G = 20(.00) OR B = 3.2 and D = 11.7 and F = 4.5 and G = 19.4(0)</p> <p>OR</p> <p>B or D or F may be blank A = 1 and C = 2 and E = 5 and G = 18.5(0) OR A = 1 and C = 2 and E = 6 and G = 20(.00) OR A = 1 and C = 3 and E = 3 and G = 19.4(0)</p>

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	Fully correct solution	3	A5	$18 \leq G \leq 20$ $G = B + D + F$ $G = 18.50$ or $20(.00)$ or 19.40 $A = 1$ and $C \geq 2$ and $E \geq 2$ $B = A \times 3.2$ and $D = C \times 3.9$ and $F = E \times 1.5$ (Total cost in correct money format to 2 d.p.)
Total marks for question		3		

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Question	Process	Mark	Skills Standard	Evidence
Q3	Uses a suitable conversion.	1	R1	E.g. $750 \div 1000 (=0.75)$ OR $10 \times 1000 (=10\,000)$ OR $2 \times 1000 (=2000)$
	Starts to work with ratio	1 or	A4	$1 + 4 (=5)$ (may be seen in context of a calculation) OR $10 \div 5 (=2)$ or $10\,000 \div 5 (=2000)$ OR $5 \times 750 (=3750)$ or 750 and 3000 OR $1 \times 2 (=2); 4 \times 2 (=8)$
	Full process	2	A4	E.g. '10 000' \div '3750' (=2.6...) OR '2000' \div 750 (=2.6...) OR '2' \div '0.75' (=2.6...) $3 \times 750 (=2250)$
	Correct number of bottles to buy	1	I6	3(bottles)
Total marks for question		4		

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Question	Process	Mark	Skills Standard	Evidence
Q4	Full process to find cost of van hire	1	R2	58 + 15(=73)
	Process to find mileage charged at £2.20	1 or	R1	30 – 10(=20)
	Process to find extra mileage charge	2 or	A4	'20' × 2.20(=44) OR '73' – 25(=48)
	Full process to find cost of garden centre delivery	3	R3	25 + '44'(=69) OR '48' ÷ 2.2(=21.81..) OR '48' ÷ 20(=2.4)
	Correct decision and accurate figures	1	I6	Garden centre delivery identified AND (£)69 and (£)73 OR 20(miles) and 21.81..(miles) OR (£)2.2(0) and (£)2.4(0) Ignore saving if calculated
Total marks for question		5		

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Question	Process	Mark	Skills Standard	Evidence
Q5	Starts to construct a record sheet	1 or	R1	Dogs (oe), race times, average times must be identified explicitly throughout (accept abbreviations if clear) A table with headings and input opportunities for at least 2 dogs or 2 race times or 2 average times
	A complete record sheet with input opportunities.	2 or	I6	A two-way table with input opportunities for 5 dogs and 3 race times OR 5 dogs and 5 average times OR 3 times and 3 average times Ignore extra dogs and race times and average times
	A complete record sheet with efficient input opportunities	3	I6	A two-way table with input opportunities for 5 dogs, 3 race times and only one column/row for average time for each dog Ignore extra dogs and/or extra race times
Total marks for question		3		

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Question	Process	Mark	Skills Standard	Evidence
Q6	Begins to interpret the problem	1 or	R2	At least 2 activities in the table and correct total time between 5 and 6 hours OR 3 different activities in table but total time is incorrect or blank, but activities last between 5 and 6 hours
	Improves interpretation	2 or	A4	3 different activities selected and total time is correct but time is outside 5- 6 hours
	Fully correct solution	3	I6	3 different activities selected and time correctly added between 5 and 6 hours.
Total marks for question		3		

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Question	Process	Mark	Skills Standard	Evidence
Q7(a)	Works with trays or works with eggs	1 or	R2	Multiplies 50 or 30 by an integer > 1 OR Adds at least two 30s or two 50s OR subtracts at least one 50 or one 30 from 380 OR $380 \div 30 (=12.6\dots)$ OR $380 \div 50(=7.6)$ OR $380 \div (50 + 30)(=4.75)$
	Full process to determine trays using 380 eggs	2 or	A4	E.g. $7 \times 50 + 30(=380)$ oe OR $50 + 11 \times 30(=380)$ oe OR $4 \times 50 + 6 \times 30(=380)$ oe
	Correct number of trays	3	I6	1 small and 7 large OR 6 small and 4 large OR 11 small and 1 large
Q7(b)	Valid check	1	A5	E.g. Reverse process or alternative method
Total marks for question		4		

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Question	Process	Mark	Skills Standard	Evidence
Q8	Uses consistent units	1	A4	7200(mm) or 3600mm or 120 (cm) or 90(cm) OR 7.2(m) and 3.6(m) or 1.2(m) and 0.9(m)
	Considers boards in one dimension or process to calculate an area	1 or	R2	'7200' ÷ 900(=8) or 720 ÷ '90'(=8) oe OR '7200' ÷ 1200(=6) or 720 ÷ '120'(=6) oe OR '3600' ÷ 900(=4) or 360 ÷ '90'(=4) oe OR '3600' ÷ 1200(=3) or 360 ÷ '120'(=3) oe OR 720 × 360(=259 200) or 7200 × 3600(=25 920 000) oe OR 1200 × 900(=1 080 000) or 120 × 90(=10 800)oe (note: may work in metres)
	Considers boards in both dimensions or process to calculate both areas in consistent units	2 or	R3	'7200' ÷ 1200(=6) oe and '3600' ÷ 900(=4) oe OR '7200' ÷ 900(=8) oe and '3600' ÷ 1200(=3) oe OR 720 × 360(=259 200) oe and 120 × 90(=10 800) oe (note: may work in metres)
	Full process to find number of boards using correct units	3	A4	'6' × '4'(=24) OR '8' × '3'(=24) OR '25 920 000' ÷ '1 080 000'(=24) oe OR
	Process to find cost of boards needed or possible number of boards for given cost	1 or	A4	'24' × 14.99(=359.76) OR 375 ÷ 14.99(=25.01..) or 375 ÷ 15(=25) OR 25×14.99(=374.75)
	Conclusion and correct cost or comparison of number of boards	2	I6	Yes and (£)359.76 or (£)15.24 left Yes and 25 (boards affordable) and 24 (boards needed)
Total for marks question		6		

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Question	Process	Mark	Skills Standard	Evidence
Q9	Works with mean or median	1 or	R1	980 + 970 + 1410 + 1690 + 1300 (=6350) OR 1250 × 5(=6250) OR 970, 980, 1300, 1410, 1690 OR Finds differences from means (ignore signs) E.g. 1250 – 980(=270) and 1250 – 970(=280) and 1250 – 1410(=-160) and 1250 – 1690 (=–440) and 1250 – 1300(=-50)
	Completes calculation to enable comparison	2 or	A4	‘6350’ ÷ 5(=1270) OR 980 + 970 + 1410 + 1690 + 1300 (=6350) and 1250 × 5(=6250) OR Identifies (median) 1300 OR Adds differences from means E.g. ‘270’ + ‘280’ + ‘-160’ + ‘-440’ + ‘-50’ (=–100)
	Decision with correct figures	3	I6	No and (£)1270 OR No and (£)6350 and (£)6250 OR No and (£)1300 No and (£) –100
Total marks for question		3		

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Question	Process	Mark	Skills Standard	Evidence
Q10	Considers constraints	1 or	R2	Resized rectangle with sides in the ratio 1: 2 OR Resized rectangle one side 3 squares or one side 6 squares and two of: At least 2 squares from the radiator At least 1 square from the storage cupboard Touching a wall
	Improves solution	2 or	A5	Rectangle 3 squares by 6 squares with at least 1 of: At least 2 squares from the radiator At least 1 square from the storage cupboard Touching a wall
	Correct solution	3	I6	Rectangle 3 squares by 6 squares with all of: At least 2 squares from the radiator At least 1 square from the storage cupboard Touching a wall Not over door
Total marks for question		3		

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Question	Process	Mark	Skills Standard	Evidence
Q11(a)	Addresses one feature	1 or	R1	1 of: linear scale, labels, plotting
	Improves chart	2 or	A4	2 of: linear scale, labels, plotting
	Fully correct chart	3	I6	3 of: linear scale, labels, plotting Minimum labelling – May, Jun, Jul, Aug, tickets (may appear in title) For plotting: accuracy ± 1 small square For linear scale: condone errors outside range 2000 – 5000
Q11(b)	Makes a valid simple statement	1 or	I6	Compares sales in single year, e.g. May (sales) highest in 2013 Compares sales between years (if year not stated assume 2013 to 2014), e.g. more tickets sold in May 2014 than Aug 2013 or more tickets sold (in 2014)
	Makes two different valid simple statements where at least one is between years OR one developed statement.	2	I6	Developed statement (year stated explicitly), e.g. '15 220'/'3805' (sales) greater in 2014 or more tickets sold in May and June 2014 than in (May and June 2013) [NB If year(s) not stated for comparison between year, assume comparison is from 2013 to 2014 2013 total = 15 040, average = 3760 2014 total = 15 220, average = 3805]
Total marks for question		5		

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Q12(a)	Starts to process the problem	1	R3	E.g. $300 \times [2, 10] (= [600, 3000])$ or $300 \div 12 (= 25)$ OR $150 \div 3 (= 50)$ or $150 \times 4 (= 600)$ OR $7500 \div 10 (= 750)$
	Handles cost for time period for electricity company	1	A4	E.g. $150 \times 4 \times [2, 3, \dots, 10] (= [1200, 6000])$ or $'50' \times 12 \times [2, 3, \dots, 10] (= [1200, 6000])$ OR $300 + '600' (= 900)$
	Full process to determine total or time	1 or	R1	E.g. $300 \times [8, 9, 10] + 150 \times 4 \times [8, 9, 10] (= [7200, 8100, 9000])$ OR $7500 \div '900' (= 8.3\dots)$ OR $7500 \div 10 (= 750)$ and $300 + '600' (= 900)$
	Accurate figure from their full process	2 or	A4	E.g. (£)7200 or or (£)8100 or (£)9000 OR 8(.3...)(years) OR (£)750 and (£)900
	Valid decision and explanation	3	I6	E.g. Yes and (£)7200 and more than 8 (years) OR Yes and (£)8100 (in 9 years) OR Yes and (£)9000 (in 10 years) OR Yes and 8.3...(years) OR Yes and (£)750 (per year) is less (£)900 (per year)
Q12(b)	Valid check	1	A5	E.g. alternative method or reverse process
Total marks for question		6		