

# Target Test Non Calculator 1

## Mark Scheme

1380/3H				
Question	Working	Answer	Mark	Notes
1	(a)	173160	1	B1 cao
	(b)	173.16	1	B1 cao
2		$\frac{30 \times 5}{0.2} = 150 \div 0.2 = 750$	3	<p>M1 For correct roundings to 1 sig fig of two or three of the figures or consistent multiples</p> <p>e.g 150, or 155 or two of 30, 5, 0.2 or <math>\frac{31 \times 500}{20}</math> or</p> <p><math>\frac{30 \times 500}{20}</math> or <math>\frac{30 \times 500}{21}</math></p> <p>Or</p> <p>A1 for any correct approximate expression which would give the answer after one operation e.g <math>\frac{150}{0.2}</math> or <math>\frac{155}{0.2}</math> or</p> <p><math>150 \times 5</math> or <math>30 \times 25</math> or <math>31 \times 25</math> or <math>155 \times 5</math> or <math>\frac{1500}{2}</math></p> <p>A1 750–775</p> <p>Do not accept attempts at full working out</p>

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3	(a)		-2,(0,2),4,6,8	2	B2 for all 4 correct values of y (B1 for 2 or 3 correct values of y)
	(b)		Line	2	B2 for correct straight line between $x = -2$ and $x = 3$ (B1 for a line which passes through (0, 2), or a line with gradient 2, or at least 4 points from their table plotted correctly)
	(c) (i)		-1	1	B1 for $y=-1$ , or ft $x=-1.5$ from any portion of a straight line segment.
	(ii)		2.5	1	B1 for $x=2.5$ , or ft $y=7$ from any portion of a straight line segment.
4	(a)		Enlarged P	2	B2 any correct enlargement (B1 at least one side drawn to a sf of 3) tol $\frac{1}{2}$ sq (B1 correct enlargement by SF $\neq 3$ )
	(b)	Triangle at (2,-1),(3,-1),(2,-3)	Rotated Q	3	B3 fully correct (B2 correct orientation in correct quadrant or $90^\circ$ anticlockwise about $O$ ) (B1 any rotation about $O$ OR correct orientation in incorrect quadrant).  SC B1 If Q is plotted correctly in all 4 quadrants then award

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5	(a)	3   3 8 7 4   6 1 4 5   4 1 5 1 5 2 6   0 2 3	3   3 7 8 4   1 4 6 5   1 1 2 4 5 5 6   0 2 3	3	M1 for unordered diagram (condone one error, eg an omitted value or an incorrect value or a duplicated value or a misplaced value) A1 cao B1 for key (eg $4 \mid 6 = 46$ , $30 \mid 6 = 36$ )
	(b)		$\frac{10}{15}$	2	M1 numerator of 10 ft table or for denominator of 15 A1 $\frac{10}{15}$ oe
6	(a)		Polygon	2	B2 Fully correct polygon. Points plotted at the midpoint $\pm 2\text{mm}$ (B1 All points plotted accurately not joined, or one error in plotting but joined) or all points plotted accurately with first joined to last, or all points at the correct heights and consistently within or at the ends of the intervals and joined (Includes joining last to first to make a polygon)).  NB: ignore polygon before 1 <sup>st</sup> point, and after last point. Ignore any histograms.
	(b)		$20 < t \leq 30$	1	B1 $20 < t \leq 30$ or ft from graph..Accept any unambiguous description of the correct interval e.g 20 – 30

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7	(a) $\frac{3}{8} + \frac{1}{4} = \frac{3}{8} + \frac{2}{8} =$  Or <table border="1" style="margin-left: 20px;"> <tr> <td></td> <td>1</td> <td>4</td> </tr> <tr> <td>3</td> <td>XXXX</td> <td>12</td> </tr> <tr> <td>8</td> <td>8</td> <td>32</td> </tr> </table> $8 + 12 = 20$		1	4	3	XXXX	12	8	8	32	$\frac{5}{8}$	2	M1 Use of common denominator: $\frac{1}{4}$ as $\frac{2 \times 1}{2 \times 4}$ or writing both fractions with a common denominator other than 8 with at least one of the fractions correct.  OR $0.375 + 0.25$ A1 $\frac{5}{8}$ Accept 0.625 only  Or M1 for sight of the addition table and $8 + 12 (= 20)$  A1 $\frac{5}{8}$
	1	4											
3	XXXX	12											
8	8	32											
	(b) $\frac{2}{3} \times \frac{4}{5} = \frac{2 \times 4}{3 \times 5} = \frac{8}{15}$	$\frac{8}{15}$	2	M1 for multiplying numerator and denominator of $\frac{2}{3}$ and $\frac{4}{5}$ OR $0.66(\dots) \times 0.8$ OR $0.67 \times 0.8$ oe  A1 for $\frac{8}{15}$ oe OR for 0.533..									

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Question	Working	Answer	Mark	Notes
7	(c)	5076	3	<p>M1 for a complete method with relative place value correct. Condone 1 multiplication error, addition not necessary. M1 (dep) for addition of all the appropriate elements of the calculation A1 cao</p> <p>M1 for a complete grid with not more than 1 multiplication error, addition not necessary. M1 (dep) for addition of all the appropriate elements of the calculation A1 cao</p> <p>M1 for sight of a complete partitioning method, condone 1 multiplication error, addition not necessary. M1 (dep) for addition of the all the appropriate elements of the calculation A1 cao</p> <p>M2 for repeated addition, exactly 12 A1 cao</p>

$$\begin{array}{r}
 423 \quad 12 \\
 \times 12 \quad \times 423 \\
 \hline
 4230 \quad 4800 \\
 846 \quad 240 \\
 \hline
 5076 \quad 36 \\
 \hline
 5076
 \end{array}$$

4	2	3	
0	0	0	1
4	2	3	
0	0	0	2
8	4	6	

400	20	3	
4000	200	30	10
800	40	6	2

$$4000+200+30+800+40+6=5076$$

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Question	Working	Answer	Mark	Notes
8	(a)	Reasons	2	<p>1<sup>st</sup> aspect: time frame</p> <p>2<sup>nd</sup> aspect: overlapping boxes (eg. 'the 5 is in two places' 'the amounts overlap')</p> <p>3<sup>rd</sup> aspect: not exhaustive (eg no &lt;£1, other)</p> <p>Award B2 for 2 aspects, B1 for 1 aspect</p>
	(b)	Any 2 of 1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> aspects	2	<p>1<sup>st</sup> aspect: one question or responses which includes a time frame</p> <p>2<sup>nd</sup> aspect: at least 3 non-overlapping response boxes; need not be inclusive of all.</p> <p>3<sup>rd</sup> aspect ; Allow for inclusion of (£)0 or use of phrase 'bigger than' oe with at least 3 response boxes</p> <p>Award B2 for two aspects, B1 for one aspect</p> <p>NB response boxes must be intervals but allow 0 on its own for the 3<sup>rd</sup> aspect</p>

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9	(a)		$2a + 7c$	2	B2 for $2a + 7c$ (B1 for $2a$ or $7c$ )
	(b)		$2y^2 - 3y$	1	B1 $2y^2 - 3y$ or $2 \times y^2 - 3 \times y$
	(c)		$x(x-4)$	2	B2 $x(x-4)$ or $(x+0)(x-4)$ condone omission of final bracket (B1 $x(\text{linear in } x)$ condone omission of final bracket) (B1 for $x-4$ )
	(d)	$2x + 6$ or $6x - 3$	$8x + 3$	2	B2 $8x + 3$ (B1 for $2x + 6$ or $6x - 3$ )
	(e)		$\frac{2}{3}$	2	M1 for expansion of brackets or division by 3 A1 $\frac{2}{3}$ oe



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Question	Working	Answer	Mark	Notes
10		$N=4p+20b$	3	<p>B3 for <math>N=4p+20b</math> oe</p> <p>(B2 <math>4p+20b</math> as an expression not in a formula Or <math>N=k+20b</math> oe or <math>N=4p+k</math> oe <math>k \neq 0</math>)</p> <p>(B1 for <math>N=cp + db</math>, <math>c</math> and <math>d</math> numerical and not both zero Or <math>k+20b</math> oe or <math>4p+k</math> oe any <math>k \neq 0</math>)</p> <p>SC B2 for <math>N = 4p+20b</math> subsequently incorrectly simplified</p> <p>SC B2 for <math>kN = 4p+20b</math> (<math>k \neq 1</math>)</p> <p>SC B1 for <math>4p+20b</math> subsequently incorrectly simplified</p> <p>SC B1 for <math>N = 4p</math> (space)<math>20b</math> or <math>N = 4p \times 20b</math></p>
11	(a)	$2.13 \times 10^5$	1	B1 cao
	(b)	$1.23 \times 10^{-3}$	1	B1 cao (SC If both numbers are written correctly to 2 Sig fig then award B0,B1)
12	(a)	1	1	B1 cao
	(b)	$\frac{1}{2}$	1	B1 oe Accept 0.5

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Question	Working	Answer	Mark	Notes
13	(a)	50	1	B1 cao
	(b) (i)	Explanation	1	B1 Comparison of medians, or quartiles or spot points eg highest, lowest, median, etc. Allow 'average' for median
	(ii)	Explanation	1	B1 Comparison of IQR, or range . Allow 'dispersion or spread' Comparison of skewness NB: (b) could be ft from (a)

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14	(a) $\frac{5}{7}, \frac{2}{7}, \frac{5}{7}, \frac{2}{7}, \frac{5}{7}, \frac{2}{7}$		2	B1 for $\frac{5}{7}, \frac{2}{7}$ on LH branch B1 for $\frac{5}{7}, \frac{2}{7}, \frac{5}{7}, \frac{2}{7}$ on RH branch
	(b) $\frac{5}{7} \times \frac{2}{7} + \frac{5}{7} \times \frac{2}{7}$ $= \frac{10}{49} + \frac{10}{49} = \frac{20}{49}$	$\frac{20}{49}$	3	M1 for " $\frac{5}{7} \times \frac{2}{7}$ " alone M1 for addition of two products from correct branches eg " $\frac{5}{7} \times \frac{2}{7} + \frac{5}{7} \times \frac{2}{7}$ " A1 $\frac{20}{49}$ oe Alternative: M2 for an attempt to evaluate $1 - \frac{5}{7} \times \frac{5}{7} - \frac{2}{7} \times \frac{2}{7}$ A1 cao SC $\frac{5}{7} \times \frac{2}{6} + \frac{2}{7} \times \frac{5}{6} = \frac{20}{42}$ gets B2
15	$4x + y = -1$ $12x + 3y = -3$ <u><math>4x - 3y = 7</math></u> <u><math>4x - 3y = 7</math></u> $4y = -8$ $16x = 4$ $y = -2$ $x = 1/4$	$x = \frac{1}{4}$ $y = -2$	3	M1 for correct process to eliminate either $x$ or $y$ (condone one arithmetic error) M1 (dep on previous M1) for substituting found value into an appropriate equation, or further elimination A1 cao