

Mark Scheme (Results)

January 2015

Pearson Edexcel Level 2 Award
in Number and Measure (ANM20)
Paper 2A + 2B

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NOTES ON MARKING PRINCIPLES

1 **Types of mark**

M marks: method marks

A marks: accuracy marks

B marks: unconditional accuracy marks (independent of M marks)

2 **Abbreviations**

cao – correct answer only

ft – follow through

isw – ignore subsequent working

SC: special case

oe – or equivalent (and appropriate)

dep – dependent

indep - independent

3 **No working**

If no working is shown then correct answers normally score full marks

If no working is shown then incorrect (even though nearly correct) answers score no marks.

4 **With working**

If there is a wrong answer indicated on the answer line always check the working in the body of the script (and on any diagrams), and award any marks appropriate from the mark scheme.

If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.

If it is clear from the working that the “correct” answer has been obtained from incorrect working, award 0 marks. Send the response to review, and discuss each of these situations with your Team Leader.

If there is no answer on the answer line then check the working for an obvious answer.

Any case of suspected misread loses A (and B) marks on that part, but can gain the M marks. Discuss each of these situations with your Team Leader.

If there is a choice of methods shown, then no marks should be awarded, unless the answer on the answer line makes clear the method that has been used.

5 Follow through marks

Follow through marks which involve a single stage calculation can be awarded without working since you can check the answer yourself, but if ambiguous do not award.

Follow through marks which involve more than one stage of calculation can only be awarded on sight of the relevant working, even if it appears obvious that there is only one way you could get the answer given.

6 Ignoring subsequent work

It is appropriate to ignore subsequent work when the additional work does not change the answer in a way that is inappropriate for the question: e.g. incorrect cancelling of a fraction that would otherwise be correct

It is not appropriate to ignore subsequent work when the additional work essentially makes the answer incorrect e.g. algebra.

Transcription errors occur when candidates present a correct answer in working, and write it incorrectly on the answer line; mark the correct answer.

7 Parts of questions

Unless allowed by the mark scheme, the marks allocated to one part of the question CANNOT be awarded in another.

8 Use of ranges for answers

If an answer is within a range this is inclusive, unless otherwise stated

Section A

PAPER: ANM20_2A				
Question	Working	Answer	Mark	Notes
1	(i)	3.8	1	B1 cao
	(ii)	22.6	1	B1 cao
2		105	3	M1 for $210 \div 14 (=15)$ oe M1 for "15" $\times 7$ or $30: 75 : 105$ oe A1 cao
3		1254	1	B1 cao
4	(a)	11	1	B1 cao
	(b)	256	1	B1 cao
	(c)	2.78	1	B1 cao
	(d)	13	2	M1 for $25+144$ or 169 A1 cao
5		37.6 – 37.8	3	M1 for $2 \times \pi \times 6$ or $12 \times \pi$ or statement $2 \times \pi \times r$ oe M1 for $2 \times 3.14 \times 6$ or otherwise correct substitution A1 for 37.6 – 37.8
6		2 : 5	2	M1 for $12 : 30$ or $5 : 2$ or fraction equivalent to $12 : 30$ or $2 : 5$ incorrectly expressed eg 2,5 A1 for 2 : 5

PAPER: ANM20_2A				
Question	Working	Answer	Mark	Notes
7		1680	2	M1 for 120×14 A1 cao
8		68	3	M1 for $80 \times 0.15 (=12)$ oe or $100 - 15 (=85)$ M1 for $80 - "12"$ or 92 or 80×0.85 oe A1 cao
9		420	3	M1 for listing at least 3 multiples of one number (eg 20, 40, 60, ... or 42, 84, 126) or for factor trees showing at least two prime factors of both (eg 2,2,5 and 2,3,7) or one complete factor tree or all prime factors shown as products for just one. M1 for listing at least 3 multiples of each or for factor trees showing all prime factors of both or all prime factors shown as products for both. A1 cao
10		240	3	M1 for $6 \times 8 \div 2 (=24)$ or $6 \times 8 \times 10$ only ($=480$) M1 for $6 \times 8 \times 10 \div 2$ A1 cao
11		859.60	3	M1 for $700 \times 5.7 \div 100 (=39.9)$ oe or $700 \times 0.04 (=28)$ M1 for $700 \times 5.7 \times 4$ oe or $"39.9" \times 4$ or digits 1596 or 540.4 A1 cao Accept 859.6
12		165	4	M1 for any division of the shape into rectangles and triangle(s) or a triangle from a rectangle (could be implied from working); also accept trapezium. M1 for an area of a rectangle or an area of a triangle M1 for complete method shown eg $12 \times 10 + 6 \times 5 + \frac{1}{2} \times 6 \times 5$ oe or $18 \times 10 - \frac{1}{2} \times 6 \times 5$ A1 cao

PAPER: ANM20_2A				
Question	Working	Answer	Mark	Notes
13		Completed Pie chart: 144° 99° 117°	4	M1 for $\frac{160}{400} \times 360 (=144)$ or $\frac{110}{400} \times 360 (=99)$ or $\frac{130}{400} \times 360 (=117)$ A1 for at least one angle drawn accurately ($\pm 2^\circ$) or all angles calculated A1 for all angles drawn accurately ($\pm 2^\circ$) A1 (dep on M1 & 3 sectors) animal names as labels or key
14		$\frac{108}{45}$ or $2\frac{2}{5}$ or 2.4	2	M1 for correctly writing fractions as improper fractions eg $\frac{27}{5} \div \frac{9}{4}$ or $\frac{27}{5} \times \frac{4}{9}$ or correct conversion into decimals with correct operation shown eg $5.4 \div 2.25$ A1 $\frac{108}{45}$ or $2\frac{2}{5}$ or 2.4 oe
15		175.15	4	M1 for $15 \times 7.5 (=112.5)$ or $13 \times 8.15 (=105.95)$ M1 for $15 \times 7.5 (=112.5)$ and $13 \times 8.15 (=105.95)$ or $15 \times 7.5 - 43.3 (=69.2)$ or $13 \times 8.15 - 43.3 (=62.65)$ M1 for subtraction of 43.3 from their total A1 cao
16		18	3	M1 for $9440 - 8000 (=1440)$ or $\frac{1440}{8000} (=0.18)$ or $\frac{9440}{8000} (=1.18)$ M1 for $\frac{"1440"}{8000} \times 100$ oe or sight of 1.18 or (" 1.18 "-1) $\times 100$ A1 cao
17		6.2 – 6.3	3	M1 for $\pi \times 1^2$ or $\pi \times 1$ or $\pi \times 1^2 \div 2$ or $\pi \times 1 \div 2$ or $\pi \times 0.5$ oe or $\pi \times 2 \times 4$ or $\pi \times 2^2 \times 4$ or figure 1.5 to 1.6 or 25.1 to 25.2 M1 for $\pi \times 1^2 \times 4$ or $\pi \times 1 \times 4$ or $\pi \times 1^2 \div 2 \times 4$ or $\pi \times 1 \div 2 \times 4$ or $\pi \times 2$ or figure 12.5 to 12.6 A1 6.2-6.3

Section B

PAPER: ANM20_2B					
Question		Working	Answer	Mark	Notes
1	(a)		-4	1	B1 cao
	(b)		15	1	B1 for 15 or +15
	(c)		-5	1	B1 for -5
2	(a)		1652	2	M1 for evidence of correctly set up method eg borrowing across 3 columns or decomposition etc. A1 cao
	(b)		327.6	2	M1 for correct alignment of digits ready for calculation or at least two operations performed correctly eg 367.56-39.96 or sight of 407.52 A1 for 327.6 or 327.60
3			£3.60	3	M1 for $\div 7$ or $\times 12$ or 0.3(0) or 25.2 M1 for $\div 7$ and $\times 12$ oe or 3.6 A1 cao

PAPER: ANM20_2B

Question	Working	Answer	Mark	Notes																																									
4		95.2	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> <table style="margin-left: 20px;"> <tr> <td style="padding-right: 20px;">34</td> <td>28</td> </tr> <tr> <td><u>×28</u></td> <td><u>×34</u></td> </tr> <tr> <td>272</td> <td>112</td> </tr> <tr> <td><u>680</u></td> <td><u>840</u></td> </tr> <tr> <td>952</td> <td>952</td> </tr> </table> <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> <table style="margin-left: 20px; text-align: center;"> <tr> <td></td> <td>2</td> <td>8</td> <td></td> </tr> <tr> <td></td> <td>0</td> <td>2</td> <td rowspan="2">3</td> </tr> <tr> <td></td> <td>6</td> <td>4</td> </tr> <tr> <td>9</td> <td>0</td> <td>3</td> <td rowspan="2">4</td> </tr> <tr> <td></td> <td>8</td> <td>2</td> </tr> <tr> <td></td> <td>5</td> <td>2</td> <td></td> </tr> </table> <table style="margin-left: 20px; text-align: center;"> <tr> <td>20</td> <td>8</td> <td></td> </tr> <tr> <td>600</td> <td>240</td> <td>30</td> </tr> <tr> <td>80</td> <td>32</td> <td>4</td> </tr> </table> <p>600+240+80+32=952</p> <p>M1 for sight of a complete partitioning method, condone 1 multiplication error, addition not necessary. M1 (dep) for addition of all the appropriate elements of the calculation. A1 cao</p>	34	28	<u>×28</u>	<u>×34</u>	272	112	<u>680</u>	<u>840</u>	952	952		2	8			0	2	3		6	4	9	0	3	4		8	2		5	2		20	8		600	240	30	80	32	4
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PAPER: ANM20_2B					
Question		Working	Answer	Mark	Notes
4	(b) (cont)		6.34	2	M1 for an attempt to divide by 6 as evidenced by remainder of 2 eg $\begin{array}{r} 6.34 \\ 6 \overline{) 38.0^2 4} \end{array}$ or at least 5 multiples of 6 with correct multipliers A1 cao
5			36	2	M1 for $90 \div 30 (=3)$ or 12×3 A1 cao
6	(a)		$\frac{7}{10}$	2	M1 for $\frac{35}{50}$ oe or 0.7 oe A1 cao
	(b)		$\frac{3}{4}$ of 90	3	M1 for $80 \times 4 \div 5$ oe (=64) or $90 \times 3 \div 4$ oe (=67.5) A1 for 64 and 67.5 A1 (ft, dep on two figures shown) for conclusion: " $\frac{3}{4}$ of 90"
7			480	3	M1 for rounding at least two figures eg sight of two of 8, 30, 0.5 M1 for rounding and one operation eg sight of 16, 60, 240, 300, 600 A1 any number 480-485

PAPER: ANM20_2B					
Question		Working	Answer	Mark	Notes
8	(a)		$5\frac{17}{20}$	3	M1 for use of a common denominator with at least one correct numerator eg $\frac{3}{5} + \frac{1}{4} = \frac{12}{20} + \frac{5}{20}$; $\frac{72}{20} + \frac{45}{20} = \frac{117}{20}$ oe M1 correctly stated equivalent fractions added A1 cao
	(b)		$\frac{33}{35}$	2	M1 attempt to write as vulgar fractions $\frac{3}{7} \times \frac{11}{5} =$ A1 oe

