Pearson Edexcel

Mark Scheme (Results)

January 2022

Pearson Edexcel Edexcel Award
In Number and Measure (ANM20)
Paper 2A

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

January 2022
Question Paper Log Number 66141
Publications Code ANM20_2A_2201_MS

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
isw – ignore subsequent working
oe – or equivalent (and appropriate)
indep - independent
ft – follow through
SC: special case
dep – dependent

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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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

PAPER: ANM20_2A					
Question	**Working**	**Answer**	**Mark**	**Notes**	
1 (a)		1.3	1	B1 cao	
(b)		7.6	1	B1 cao	
2		161.32	1	B1 cao	
3 (a)		–6	1	B1 cao	
(b)		(+) 14	1	B1 cao	
4		345.6	2	M1 for 36 × 9.6 A1 cao	
5 (a)		70	2	M1 for 21 + 29 + 20 A1 cao	
(b)		210	2	M1 for 21 × 20 ÷ 2 A1 cao SC: award the method marks in each part if the answers are reversed without ambiguity	
6		48	2	M1 for a method to calculate 16% of 300 either directly or by partitioning eg 300 × 0.16 oe or 10% as 30 **and** 6% as 18 with 30+18 **or** 10% as 30 **and** 1% as 3 with 30+3+3+3+3+3+3 **or** any equivalent method **or** 48 seen, then used as part of an extended method eg 348 or 252 A1 cao	

PAPER: ANM20_2A					
Question	**Working**	**Answer**	**Mark**	**Notes**	
7		288	2	M1 for 1.2 × 240 oe A1 cao	
8 (a)		29	1	B1 cao	
(b)		4913	1	B1 cao	
(c)		2000	2	M1 for 125 or for 16 A1 cao	
9		375	3	M1 for 5000 × 3 ÷ 100 oe (=150) or 5150 or 5000 × 2.5 ÷ 100 oe (=125) or 5125 or 3 × 2.5 ÷ 100 (=0.075) M1 for 5000 × 3 × 0.025 oe or 5375 or 4625 A1 cao	
10		40	2	M1 for 180 ÷ 4.5 oe A1 cao	

PAPER: ANM20_2A					
Question	**Working**	**Answer**	**Mark**	**Notes**	
11		$3\frac{3}{5}$	2	M1 for correctly writing fractions as improper fractions eg $\frac{81}{10} \div \frac{9}{4}$ or $\frac{81}{10} \times \frac{4}{9}$ or 8.1 ÷ 2.25 A1 for $\frac{36}{10}$ or $\frac{18}{5}$ or $3\frac{3}{5}$ or 3.6 oe	
12		530.68	4	M1 for 11.50×36 (=414) or 20.20×15 (=303) M1 for 143.3 + 43.02 (=186.32) or subtraction of both or for "414" + "303" (=717) M1 for complete method eg "414" + "303" – "186.32" oe A1 cao	
13		18.8 to 18.9	3	M1 for 2×π×3 or 6×π or statement 2×π×*r* oe M1 for complete method with correct substitution eg 2×3.14×3 A1 for an answer in the range 18.8 to 18.9	
14		Correct pie chart	4	M1 for $\frac{700}{1800} \times 360 (= 140)$ or $\frac{800}{1800} \times 360 (= 160)$ or $\frac{300}{1800} \times 360 (= 60)$ oe A1 for at least one angle drawn accurately (±2°) or all angles calculated A1 for all angles drawn accurately (±2°) A1 (dep on M1 & 3 sectors) for labels or key (not angles or numbers)	

PAPER: ANM20_2A					
Question	**Working**	**Answer**	**Mark**	**Notes**	
15	48 = $2\times2\times2\times2\times3$ 80 = $2\times2\times2\times2\times5$ HCF is $2\times2\times2\times2$ =	16	3	M1 for a method to find the factors of 48 (at least 4 from 1, 2, 3, 4, 6, 8, 12, 16, 24, 48) **or** 80 (at least 4 from 1, 2, 4, 5, 8, 10, 16, 20, 40, 80) Could be shown in a Venn diagram. M1 (dep) for showing one common factor (1,2,4,8,16) **or** both complete lists of factors A1 cao	M1 for factor trees showing at least two prime factors of both numbers (eg 2,2,2,2,3 and 2,2,2,2,5) **or** one complete factor tree for 48 or 80 M1 (dep) for showing two complete factor trees for 48 and 80 or showing $2\times2\times2\times2\times3$ **or** showing $2\times2\times2\times2\times5$
16		115 to 115.2	4	M1 for division of the shape (can be implied from working with a rectangular or circular area) M1 for an appropriate rectangular area eg 18×5 (=90) or 8×5 (=40) or 5×5 (=25) **or** for a circular area eg $\pi \times 4^2$ (=50.265…) or $\pi \times 4^2 \div 2$ (=25.13…) or $\pi \times 8^2$ (=201.06…) or $\pi \times 8^2 \div 2$ (=100.53…) M1 for adding their rectangular area to their circular area eg "25.13…" + "90" A1 for answer in the range 115 to 115.2	
17		22	3	M1 for $65 - 50.7$ (=14.3) or $\frac{50.7}{65}$ (=0.78) M1 for $\frac{"14.3"}{65}\times100$ or 1 – "0.78" or sight of 0.22 A1 cao	

PAPER: ANM20_2A					
Question	**Working**	**Answer**	**Mark**	**Notes**	
18		628 to 629	3	M1 $\pi \times 5^2$ (=78.5 to 78.6) or statement $\pi \times r^2 \times h$ M1 for $\pi \times 5^2 \times 8$ A1 for answer in the range 628 to 629 or 200π	