



1.7D Rounding: Fluency and Exam Drill

EDEXCEL Edexcel 1MA1 · Calculator allowed · about 35 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

1 Round 274 to the nearest 10.

(Total for Question 1 is 1 mark)

2 Round 4,862 to the nearest 100.

(Total for Question 2 is 1 mark)

3 Round 15,648 to the nearest 1,000.

(Total for Question 3 is 1 mark)

4 Round 3.846 to 2 decimal places.

(Total for Question 4 is 1 mark)

5 Round 0.04687 to 3 decimal places.

(Total for Question 5 is 1 mark)

6 Round 82.56 to 1 significant figure.

(Total for Question 6 is 1 mark)

7 Round 0.007894 to 2 significant figures.

(Total for Question 7 is 1 mark)

8 A shop price is £24.95. Give a quick estimate of the price to 2 significant figures for a mental comparison.

(Total for Question 8 is 1 mark)

9 Calculate 46.8×3.25 . Give your answer rounded to 2 decimal places. Then estimate the product by rounding each number to 1 significant figure and say whether your rounded answer is reasonable.

(Total for Question 9 is 3 marks)

10 Show that 0.3728 rounded to 3 significant figures is 0.373.

(Total for Question 10 is 2 marks)

11 A cylinder has radius 3.56 cm and height 12.4 cm. Calculate the volume in cubic centimetres. Give your answer to 3 significant figures. (Use $\pi = 3.14159265\dots$)

(Total for Question 11 is 3 marks)

12 A student multiplies 129.7 by 0.486 and writes 63.0 as the result. Use rounding to 2 significant figures to estimate the product and say whether 63.0 is a reasonable answer.

(Total for Question 12 is 2 marks)

- 13** A recipe needs 0.0375 kg of sugar per portion. How much sugar is needed for 280 portions?
Give your answer rounded to 2 significant figures for shopping.

(Total for Question 13 is 3 marks)

- 14** A factory produced 12,642 items this week. Report this total rounded to the nearest 100.

(Total for Question 14 is 1 mark)

- 15** Show that 0.004679 rounded to 2 significant figures is 0.0047.

(Total for Question 15 is 2 marks)

- 16** Round 999.6 to the nearest 10 and to the nearest 100. Explain briefly why both answers may be the same.

(Total for Question 16 is 3 marks)

Mark scheme · 1.7D Rounding: Fluency and Exam Drill

Question 1

- **B1** 270 cao
- **Answer:** 270

Question 2

- **B1** 4,900 cao
- **Answer:** 4900

Question 3

- **B1** 16,000 cao
- **Answer:** 16000

Question 4

- **B1** 3.85 cao
- **Answer:** 3.85

Question 5

- **B1** 0.047 cao
- **Answer:** 0.047

Question 6

- **B1** 80 cao
- **Answer:** 80

Question 7

- **B1** 0.0079 cao
- **Answer:** 0.0079

Question 8

- **B1** £25 cao
- **Answer:** 25

Question 9

- **M1** correct calculation of product, e.g. $46.8 \times 3.25 = 152.1$ or method shown
- **A1** 152.10 cao
- **B1** estimation: $50 \times 3 = 150$ and conclusion that 152.10 is reasonable oe
- **Answer:** 152.10

Question 10

- **M1** identify first 4 significant digits 3,7,2,8 and note the 4th digit 8 causes rounding up oe
- **A1** cso 0.373 cao
- **Answer:** 0.373

Question 11

- **M1** use volume = $\pi r^2 h$ with substitution $\pi \times 3.56^2 \times 12.4$
- **M1** carry out calculation to find volume = $\pi \times 157.15264 = 493.709...$ (or equivalent)
- **A1** 494 cm³ to 3 s.f. cao
- **Answer:** 494 cm³

Question 12

- **M1** estimate using $130 \times 0.49 = 63.7$ oe
- **A1** conclude 63.0 is reasonable as it is close to the estimate cao
- **Answer: Yes, reasonable (estimate 63.7)**

Question 13

- **M1** multiply $0.0375 \times 280 = 10.5$ shown
- **A1** round 10.5 to 2 s.f. = 11.0 or 11 kg cao
- **B1** state this is suitable as a shopping estimate oe
- **Answer: 11 kg**

Question 14

- **B1** 12,600 cao
- **Answer: 12,600**

Question 15

- **M1** identify first three significant digits 4,6,7 and note the 3rd digit 7 causes rounding up oe
- **A1** cso 0.0047 cao
- **Answer: 0.0047**

Question 16

- **M1** nearest 10: 1,000 identified
- **M1** nearest 100: 1,000 identified
- **B1** explain that rounding crosses the threshold so both round up to 1,000 oe
- **Answer: nearest 10 = 1000; nearest 100 = 1000**