



KS3.M-N4 Place Value, Ordering and Rounding

AQA KS3.M-N4 · Calculators not allowed · about 50 minutes

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

1 Write each number in words.

(a) 324 (1)

(b) 7 405 (write with spaces as thousands separator shown) (1)

(c) 0.3 (1)

(d) 12.07 (1)

2 Write these numbers in order, starting with the smallest.

(a) 0.45, 45/100, 0.5, 0.405 (2)

3 What is the value of the digit 5 in each number?

(a) In 5 638 (1)

(b) In 482.5 (1)

(c) In 0.056 (1)

4 Round each number to the nearest whole number.

(a) 6.3 (1)

(b) 11.6 (1)

(c) 0.49 (1)

5 Round each number to one decimal place.

(a) 3.46 (1)

(b) 12.01 (1)

(c) 0.999 (1)

(d) 4.24 (1)

6 Round 7 849 to the nearest 100.

(a) Round 7 849 to the nearest 100. (2)

7 Write these numbers in order, largest first.

(a) 0.7, 0.67, $\frac{2}{3}$, 0.701 (2)

8 Round each number to 2 significant figures.

(a) 375 (1)

(b) 0.0489 (1)

(c) 8 634 (1)

9 Give each number to 3 significant figures.

(a) 12.346 (1)

(b) 0.00456 (1)

(c) 9 998 (1)

10 A classroom has 27 pupils. The teacher records the heights to the nearest centimetre: 142, 148, 143, 141, 149, 146, 144, 147, 145, 143, 142, 148, 144, 146, 145, 143, 142, 147, 146, 144, 143, 142, 145, 148, 144, 146, 143. Work out the mode of the list.

(a) Find the mode of the heights. (2)

11 Write each number in standard form if needed, or say 'not required' for a simple whole number.

(a) 5 200 (1)

(b) 34 (1)

12 A recipe uses 0.375 litres of milk. Round this amount to 2 decimal places and to the nearest tenth of a litre.

(a) Round 0.375 to 2 decimal places. (2)

(b) Round 0.375 to the nearest tenth. (1)

13 Which digit is in the tens place in the number 6 052?

(a) State the digit in the tens place. (2)

14 Order these numbers from smallest to largest. Give answers as decimals.

(a) $3\frac{1}{2}$, 3.49, 3.505 (2)

15 A baker uses 2.75 kg of flour each day. Estimate how much flour is used in 7 days by rounding 2.75 to 1 decimal place first.

(a) Round 2.75 to 1 decimal place, then multiply by 7 to estimate total. (3)

16 Classify each statement as true or false. Give a short reason for any false statement.

(a) 0.300 rounded to 2 significant figures is 0.30. (2)

(b) Rounding 4.95 to 1 decimal place gives 5.0. (2)

17 A measurement is 0.0702 m. Give this measurement to 2 significant figures and explain why zeros are counted or not counted.

(a) Give 0.0702 to 2 significant figures and explain which zeros count. (3)

18 Final problem: A shop advertises a jug holding 1.25 litres. A customer pours out 0.378 litres. How much remains in the jug? Give your answer to 3 decimal places.

(a) Work out how much remains and round to 3 decimal places. (2)

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Mark scheme · KS3.M-N4 Place Value, Ordering and Rounding

Question 1

- (a) **B1** three hundred twenty four cao
- (a) Answer: **three hundred twenty four**
- (b) **B1** seven thousand four hundred five cao
- (b) Answer: **seven thousand four hundred five**
- (c) **B1** three tenths or zero point three cao
- (c) Answer: **three tenths**
- (d) **B1** twelve point zero seven or twelve and seven hundredths cao
- (d) Answer: **twelve point zero seven**

Question 2

- (a) **M1** convert to decimals or recognise equivalent values (0.405 , 0.45 , 0.5 , $0.45=45/100$) oe
- (a) **A1** correct ordered list: 0.405 , $45/100$, 0.45 , 0.5 cao
- (a) Answer: **0.405, 45/100, 0.45, 0.5**

Question 3

- (a) **B1** 5 thousand or 5 000 cao
- (a) Answer: **5 000**
- (b) **B1** five tenths or 0.5 cao
- (b) Answer: **0.5**
- (c) **B1** five hundredths or 0.05 cao
- (c) Answer: **0.05**

Question 4

- (a) **B1** 6 cao
- (a) Answer: **6**
- (b) **B1** 12 cao
- (b) Answer: **12**
- (c) **B1** 0 cao
- (c) Answer: **0**

Question 5

- (a) **B1** 3.5 cao
- (a) Answer: **3.5**
- (b) **B1** 12.0 cao
- (b) Answer: **12.0**
- (c) **B1** 1.0 cao
- (c) Answer: **1.0**
- (d) **B1** 4.2 cao
- (d) Answer: **4.2**

Question 6

- (a) **M1** identify hundreds and tens: 7 800 with 49 to check or use 7 849 -> look at tens 4
- (a) **A1** 7 800 cao
- (a) Answer: **7 800**

Question 7

- (a) **M1** convert to decimals or compare values: $2/3 = 0.666...$ url or recognise ordering
- (a) **A1** correct order: 0.701 , 0.7 , 0.67 , $2/3$ cao
- (a) Answer: **0.701, 0.7, 0.67, 2/3**

Question 8

- (a) **B1** 380 cao
- (a) Answer: **380**
- (b) **B1** 0.049 cao
- (b) Answer: **0.049**
- (c) **B1** 8 600 cao
- (c) Answer: **8 600**

Question 9

- (a) **B1** 12.3 cao
- (a) Answer: **12.3**
- (b) **B1** 0.00456 -> 0.00456 to 3 SF is 0.00456 -> 0.00456 rounds to 0.00456 but must show 3 SF as 0.00456 cao
- (b) Answer: **0.00456**
- (c) **B1** 10 000 cao
- (c) Answer: **10 000**

Question 10

- (a) **M1** tally or count frequencies shown
- (a) **A1** 143 cm or 142 cm if counts show tie cao
- (a) Answer: **143 cm**

Question 11

- (a) **B1** 5.2×10^3 oe
- (a) Answer: **5.2×10^3**
- (b) **B1** not required cao
- (b) Answer: **not required**

Question 12

- (a) **M1** identify hundredths and thousandths and round correctly (0.37 with 5 => round up)
- (a) **A1** 0.38 cao
- (a) Answer: **0.38**
- (b) **B1** 0.4 cao
- (b) Answer: **0.4**

Question 13

- (a) **M1** identify places correctly or show working
- (a) **A1** 5 cao
- (a) Answer: **5**

Question 14

- (a) **M1** convert $3 \frac{1}{2}$ to 3.5 and compare decimals
- (a) **A1** 3.49, 3.5, 3.505 cao
- (a) Answer: **3.49, 3.5, 3.505**

Question 15

- (a) **M1** correct rounding to 1 decimal place: 2.8 or equivalent shown
- (a) **M1** correct multiplication $2.8 \times 7 = 19.6$ shown
- (a) **A1** 19.6 kg cao
- (a) Answer: **19.6 kg**

Question 16

- (a) **M1** identify how significant figures work and state conclusion
- (a) **A1** True; 0.300 has first two significant digits 3 and 0 so 0.30 cao
- (a) Answer: **True; 0.30**
- (b) **M1** apply rounding rule to 4.95
- (b) **A1** True; 4.95 $\rightarrow$ 5.0 cao
- (b) Answer: **True; 5.0**

Question 17

- (a) **M1** correct rounding to 2 SF: identify first two non-zero digits 7 and 0 and round correctly
- (a) **M1** show explanation that leading zeros do not count as significant
- (a) **A1** 0.070 m or 0.0702 $\rightarrow$ 0.070 cao with explanation
- (a) Answer: **0.070; leading zeros before the 7 are not significant so the first two significant figures are 7 and 0**

Question 18

- (a) **M1** correct subtraction $1.25 - 0.378 = 0.872$ or shown working
- (a) **A1** 0.872 litres cao
- (a) Answer: **0.872 litres**