Maths Reasoning Activity – Decimals

Warming up*

Q1.



What number is marked at A?



Q2.

Write these numbers in order of size, starting with the smallest.



Q4.

Circle two numbers that add together to equal 0.25

0.05 0.23 0.2 0.5

1 mark

Q5.

Write the missing number to make this **division** correct.

1 mark

Q6.

Write these masses in order, starting with the lightest.



Feeling more confident**

Q1.

Large pizzas cost £8.50 each.

Small pizzas cost £6.75 each.

Five children together buy one large pizza and three small pizzas.

They share the cost equally.

How much does each child pay?





Q2.

This is part of a number line.

Write in the missing numbers.



Q3.

Here are five number cards.



Use **four** of the cards to complete these calculations.



1 mark

Q4.

Write the missing number.

1 mark

Q5.

Circle two numbers that add together to equal **0.25**

0.05	0.23	0.2	0.5
		<u> </u>	

1 mark

Q6.

Amy thought of a number.

She added 0.5 to her number and then doubled the result.

Then she subtracted 0.5 and doubled the new result.

Her final answer was 61

What number did Amy start with?



2 marks

Q7.

Look at this number.

23,451.96

Write the **digit** that is in the hundreds place.



1 mark

Write the **digit** that is in the hundredths place.



mark

Ready for a challenge***

Q1.

Forest School sells badges for charity.



For each badge sold, £1.20 is given to a charity.

How much does the charity get when 12 badges are sold?



1 IIIair

If the charity got £24, how many badges were sold?



1 mark

Q2.

One gram of gold costs £32.94

What is the cost of half a kilogram of gold?



Q3.

Four large circles and five small circles fit exactly inside this rectangle.



Not actual size

The diameter of a large circle is 17.5 centimetres.

Calculate the **diameter** of a small circle.



2 marks

Q4.

Here is part of a number line.

Write in the numbers missing from the **two** empty boxes.



2 marks

Q5.

A torch costs £7.65

Kate buys a torch and two batteries.



She pays £8.75 altogether.

How much does one battery cost?



2 marks

Q6.

Here is a number pyramid.

The number in a box is the **product** of the two numbers below it.

Write the missing numbers.



2 marks

Q7.

Circle two decimals that have a difference of 0.5

0.2	0.25	0.4	0.45	0.6	0.75	
						1 mark

Q8.

This is Kirsty's recipe for breakfast cereal.

50 grams of oats30 grams of raisins40 grams of nuts



If she uses 125 grams of oats, how many grams of raisins does she need?



2 marks

Maths Reasoning Activity – Decimals

<u>Answers</u>

Warming up*

Mark schemes

Q1

7.2

Q2.

Numbers in order as shown:

0.328 0.96 1.253 1.9

[1]

[1]

Q3.

Numbers in order, as shown:

0.098 0.607 0.78 4.003 5.6

[1]

Q4.

Numbers circled as shown:





Accept alternative unambiguous positive indications, e.g. numbers ticked or underlined.

[1]

Q5.

10

[1]

Q6.

Masses in correct order, as shown:

0.009 kg	0.99kg	1.025kg	1.25kg
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lightest

All masses must be in the correct order for the award of **ONE** mark.

Accept for **ONE** mark the masses written in reverse order **AND** the label lightest has been changed to follow suit.

Misreads and transcription errors are **not** allowed.

Feeling more confident**

Mark schemes

Q1.

Award TWO marks for the correct answer of £5.75

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g:

• $\pounds 6.75 \times 3 = \pounds 20.25$ $\pounds 20.25 + \pounds 8.50 = \pounds 28.75$ $\pounds 28.75 \div 5$

Answer need not be obtained for the award of **ONE** mark.

Up to 2

1

1

[2]

Q2.

2.089 in first box

2.095 in second box



Q5.

Numbers circled as shown:



Accept alternative unambiguous positive indications, e.g. numbers ticked or underlined.

[1]

Q6.

Award TWO marks for the correct answer of 15

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg:

■ 61 ÷ 2 = 30.5

30.5 + 0.5 = 31

- 31 ÷ 2 = 15.5
- 15.5 0.5 = wrong answer

OR

•	61 ÷ 2 = 3	30.5		
	30.5 – 0.5	= 30 (step error)		
	$30 \div 2 = 1$	5		
	15 – 0.5 =	14.5 (wrong answer) Working must be carried through to reach an answer for the award of ONE mark.	Up to 2m	[2]
Q7. (a)	4			
		Do not accept four OR 400	1	
(b)	6	6		
		Do not accept six OR $\overline{100}$	1	
Con to 1,	n mentary: T 000,000 (5N	This question assesses place value in whole numb N3a) and in decimals (5F6b).	pers up	
Ready fo	r a challen	ıge***		
Mark sc	hemes			
Q1. (a)	£14.40	Do not accept $f_{14,4}$		
			1	
(b)	20	Do not accept £20	1	[2]

Q2.

Award **TWO** marks for the correct answer of £16,470

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g:

• £32.94 × 1000 = £32,940 £32,940 ÷ 2

OR

- £32.94 × 500
 - = £3294 × 5
 - Answer need not be obtained for the award of **ONE** mark.

Up to 2

Q3.

Award TWO marks for the correct answer of 14

If the answer is incorrect, award $\ensuremath{\textbf{ONE}}$ mark for evidence of appropriate method, eg

 $17.5 \times 4 = 70$

70 ÷ 5

Accept for **ONE** mark 140 **OR** 1.4 as evidence of appropriate method. Answer need not be obtained for the award of **ONE** mark.

Up to 2 (U1)

1

1

[2]

[2]

Q4.

8.2 85	9.5	10.1
•••••		· · · · · · ·

- (a) Writes **8.2** in the left-hand box.
- (b) Writes **10.1** in the righthand box.

[2]

Q5.

Award TWO marks for the correct answer of 55p OR £0.55

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg 8.75 - 7.65 = 1.10

$1.10 \div 2 = wrong answer$

Accept: for **ONE** mark £55 OR £55p **OR** 0.55p as evidence of appropriate working. Working must be carried through to reach an answer for the award of **ONE** mark.

Up to 2

[2]

Q6.

Award **TWO** marks for three numbers correctly placed.



If the answer is incorrect award **ONE** mark for two numbers correctly placed.

Commentary: This question involves multiplying and dividing decimals where the answer has up to two decimal places (6F9).

Up to 2

Q7.

0.2 (0.25) 0.4 0.45 0.6 (0.75)

Do not award the mark if additional incorrect numbers are circled. Accept alternative unambiguous indications, eg numbers ticked, crossed or underlined.

[1]

[2]

Q8.

Award TWO marks for the correct answer of 75

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg:

■ 125 ÷ 50 = 2.5

 $2.5 \times 30 =$ wrong answer

 50g oats 30g raisins
25g oats 15g raisins (÷ 2)
125g oats wrong answer (× 5) Working must be carried through to reach an answer for the award of ONE mark.

OR