Multiple choice questions - Number: approximation, error intervals and calculators

Year: Year 9 · 10

Question 1 What is 0.04561 to 2 significant figures?

- ◯ **A.** 0.05
- ◯ **B.** 0.046
- ◯ **C.** 0.0456
- ◯ **D.** 0.04

Question 2 A length is 9 cm to the nearest cm. Which is the correct error interval?

- ◯ **A.** $8 \leq x < 10$
- ◯ **B.** $8.5 \leq x \leq 9.5$
- ◯ **C.** $8.5 \leq x < 9.5$
- ◯ **D.** $8.9 \leq x < 9.1$

Question 3 Which is the best estimate of $\frac{8.9 \times 31}{0.48}$?

- ◯ **A.** 540
- ◯ **B.** 180
- ◯ **C.** 5400
- ◯ **D.** 18

Question 4 Which of these is an irrational number?

- ◯ **A.** $\sqrt{16}$
- ◯ **B.** $\frac{22}{7}$
- ◯ **C.** $0.\dot{7}$
- ◯ **D.** $\sqrt{7}$

Question 5 A mass is 40 g to the nearest 10 g. What is the least possible mass?

- ◯ **A.** 30 g
- ◯ **B.** 35 g
- ◯ **C.** 39 g
- ◯ **D.** 39.5 g

Question 6 35 678 rounded to 2 significant figures is:

- ◯ **A.** 36
- ◯ **B.** 36 000
- ◯ **C.** 35 000
- ◯ **D.** 35 700

Question 7 A square has side 6 cm to the nearest cm. What is the greatest possible area?

- ◯ **A.** $36\ \text{cm}^2$
- ◯ **B.** $42.25\ \text{cm}^2$
- ◯ **C.** $30.25\ \text{cm}^2$
- ◯ **D.** $49\ \text{cm}^2$

Question 8 To find the greatest value of $a - b$ you should use:

- ◯ **A.** the upper bound of a and the upper bound of b
- ◯ **B.** the lower bound of a and the lower bound of b
- ◯ **C.** the upper bound of a and the lower bound of b
- ◯ **D.** the lower bound of a and the upper bound of b

Question 9 A number is 2.5 to 1 d.p. Which number could NOT be the original?

- ◯ **A.** 2.45
- ◯ **B.** 2.54
- ◯ **C.** 2.55
- ◯ **D.** 2.499

Question 10 The number 0.00608 has how many significant figures?

- ◯ **A.** 5
- ◯ **B.** 3
- ◯ **C.** 2
- ◯ **D.** 6

Answer grid - Number: approximation, error intervals and calculators

Year: Year 9

Question	Answer	Explanation
1	**B**	The first significant figure is 4. The next is 5 and the digit after it is 6, so round up to 0.046.
2	**C**	Half of 1 is 0.5. Lower bound is included, upper is not.
3	**A**	$\frac{9\times30}{0.5} = 540$.
4	**D**	$\sqrt{16} = 4$, 22/7 is a fraction and 0.7 recurring is 7/9. Only $\sqrt{7}$ never ends or repeats.
5	**B**	Half of 10 is 5, so the lower bound is 35 g.
6	**B**	The first two figures are 3 and 5, the next digit is 6 so round up, and keep the zeros as place holders.
7	**B**	Upper bound is 6.5, and $6.5^2 = 42.25$.
8	**C**	Make the first number as big as possible and the number you subtract as small as possible.
9	**C**	The upper bound is 2.55 and it is not included, since 2.55 would round up to 2.6.
10	**B**	The leading zeros are not significant. The significant figures are 6, 0 and 8.