

Foundation GCSE: Rounding to Significant Figures

Name: _____

Class: _____

Instructions: Answer all questions. Questions are ordered from easiest (1) to hardest (20). Working out should be shown where appropriate.

1. Round 437 to 1 significant figure.
2. Round 812 to 1 significant figure.
3. Round 658 to 1 significant figure.
4. Round 4 234 to 2 significant figures.
5. Round 7 865 to 2 significant figures.
6. Round 0.092 to 1 significant figure.
7. Round 3 141.59 to 3 significant figures.
8. Round 12 987 to 3 significant figures.
9. Round 996 to 1 significant figure.
10. Round 0.00582 to 2 significant figures.
11. Write the number 5 496 correct to 2 significant figures.
12. Calculate 32×45 and give your answer to 1 significant figure.
13. Work out $\frac{173}{4.1}$ giving your answer to 2 significant figures.
14. Round 4 995 to 2 significant figures.
15. Evaluate $\sqrt{2\,300}$ and give your answer to 3 significant figures.
16. Calculate $\frac{83 + 21.5}{3.04}$ giving your answer to 3 significant figures.
17. Work out 7.1^3 and give your answer to 2 significant figures.
18. Find the value of $\frac{98.1 - \sqrt{150}}{2.05}$ rounded to 3 significant figures.
19. A rectangle has a width of 41.2 cm and a length of 78.5 cm. Calculate its area and give your answer to 3 significant figures.
20. Evaluate $\frac{\sqrt{894} + 31.2^2}{5.1 - \sin(1)}$ giving your answer to 3 significant figures (where angle is in radians).

Answers & Worked Solutions

1. 400
The second digit is 3 (< 5), so round down: 400.
2. 800
The second digit is 1 (< 5), so round down: 800.
3. 700
The second digit is 5 (≥ 5), so round up: 700.
4. 4 200
The third digit is 3 (< 5), so keep the second digit: 4 200.
5. 7 900
The third digit is 8 (≥ 5), so round up the second digit: 7 900.
6. 0.09
The first non-zero digit is 9, and the next digit is 2 (< 5): 0.09.
7. 3 140
The fourth digit is 1 (< 5), so keep the third digit: 3 140.
8. 13 000
The fourth digit is 9, rounding the 2 up to 3: 13 000.
9. 1 000
Rounding up causes a carry into the thousands column: 1 000.
10. 0.0058
The third significant figure is 2 (< 5), so keep the second: 0.0058.
11. 5 500
The third digit is 4, rounding up the 4 to 5: 5 500.
12. 1 000
 $32 \times 45 = 1\,440$, which rounds to 1 000 to 1 sf.
13. 42
 $173 \div 4.1 = 42.195\dots$, which rounds to 42.
14. 5 000
Rounding 4 995 to 2 significant figures gives 5 000.
15. 48.0
 $\sqrt{2\,300} = 47.958\dots$, which rounds to 48.0.
16. 34.4
Calculator input: $\frac{83 + 21.5}{3.04} = 34.375\dots$, which rounds to 34.4.
17. 360
 $7.1^3 = 357.911$, which rounds to 360.
18. 40.5
Calculator input: $\frac{98.1 - \sqrt{150}}{2.05} = 40.512\dots$, which rounds to 40.5.
19. 3 230 cm²
 $\text{Area} = 41.2 \times 78.5 = 3\,234.2$, rounding to 3 sf gives 3 230.
20. 237
Calculator input: $\frac{\sqrt{894} + 31.2^2}{5.1 - \sin(1)} = 236.72\dots$, which rounds to 237.