

# Foundation GCSE: Decimal Arithmetic

Name: \_\_\_\_\_

Class: \_\_\_\_\_

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

1. Calculate:  $3.4 + 2.1$
2. Calculate:  $5.8 - 2.3$
3. Calculate:  $7.2 + 1.65$
4. Calculate:  $6.4 - 2.8$
5. Calculate:  $3.2 \times 4$
6. Calculate:  $15.6 \div 3$
7. Calculate:  $0.4 \times 0.5$
8. Calculate:  $4.8 \div 0.2$
9. Work out the value of  $1.2^2$
10. Find the square root of 0.09
11. Insert the correct symbol ( $<$ ,  $>$ , or  $=$ ) between:  $0.45 \dots 0.405$
12. Round 47.852 to 1 decimal place
13. Round 0.0384 to 2 significant figures
14. Calculate:  $2.5 + 3.1 \times 2$
15. Calculate:  $(4.2 - 1.2) \div 0.5$
16. Estimate the value of  $\frac{21.4 \times 8.9}{3.2}$  by rounding each number to 1 significant figure
17. Express 0.35 as a fraction in its simplest form
18. Convert the recurring decimal  $0.\dot{3}\dot{6}$  into a fraction in its simplest form
19. Petrol costs £1.42 per litre. A driver fills up 45.5 litres and pays with a £100 note. How much change do they receive?
20. Calculate the exact value of  $\frac{3.6 \times 10^{-2} + 0.0024}{0.001}$

## Answers & Worked Solutions

1. 5.5  
*Align decimals:  $3.4 + 2.1 = 5.5$ .*
2. 3.5  
*Subtract tenths and units:  $5.8 - 2.3 = 3.5$ .*
3. 8.85  
*Pad with zero:  $7.20 + 1.65 = 8.85$ .*
4. 3.6  
*Borrow 1 from 6:  $6.4 - 2.8 = 3.6$ .*
5. 12.8  
*Multiply ignoring decimal:  $32 \times 4 = 128$ , then adjust to 12.8.*
6. 5.2  
*Divide normally:  $15.6 \div 3 = 5.2$ .*
7. 0.2  
 $4 \times 5 = 20$ , with two decimal places gives 0.20 or 0.2.
8. 24  
*Multiply both by 10:  $48 \div 2 = 24$ .*
9. 1.44  
 $12 \times 12 = 144$ , two decimal places gives 1.44.
10. 0.3  
*Since  $0.3 \times 0.3 = 0.09$ , the root is 0.3.*
11.  $>$   
*Compare digit by digit: 0.45 is greater than 0.405.*
12. 47.9  
*Look at the second decimal digit (5), round up.*
13. 0.038  
*First two non-zero digits are 3 and 8, followed by 4 (round down).*
14. 8.7  
*BODMAS: Multiply first ( $3.1 \times 2 = 6.2$ ), then add 2.5.*
15. 6  
*Brackets first ( $3.0$ ), then  $3.0 \div 0.5 = 6$ .*
16. 60  
*Round to 1 sf:  $\frac{20 \times 9}{3} = \frac{180}{3} = 60$ .*
17.  $\frac{7}{20}$   
*Fraction is  $\frac{35}{100}$ , divide top and bottom by 5.*
18.  $\frac{4}{11}$   
*Let  $x = 0.3636\dots$ ,  $100x = 36.3636\dots$ ,  $99x = 36$ , simplify  $\frac{36}{99} = \frac{4}{11}$ .*
19. £35.39  
*Cost =  $45.5 \times 1.42 = £64.61$ . Change =  $100 - 64.61 = £35.39$ .*
20. 38.4  
*Numerator:  $0.036 + 0.0024 = 0.0384$ . Divide by 0.001 shifts decimal 3 places right: 38.4.*