

Converting Decimal to Fractions – Solutions

Change each decimal to a fraction. Leave answer in simplest terms

1. $0.67 = \frac{67}{100}$

2. $0.035 = \frac{35}{1000} = \frac{35 \div 5}{1000 \div 5} = \frac{7}{200}$

3. $1.8 = 1 + \frac{8}{10} = 1 + \frac{4}{5} = 1\frac{4}{5}$

4. $3.402 = 3 + \frac{402}{1000} = 3 + \frac{2}{500} = 3\frac{2}{500}$

5. $7.006 = 7 + \frac{6}{1000} = 7 + \frac{3}{500} = 7\frac{3}{500}$

6. $0.05 = \frac{5}{100} = \frac{5 \div 5}{100 \div 5} = \frac{1}{20}$

7. $0.\overline{4}$

① $x = 0.444\dots$

1 place

② $10^1 x = 10^1 (0.444\dots)$

$10x = 4.444\dots$

③ $10x = 4.\overline{444\dots}$

$-x = 0.\overline{444\dots}$

$9x = 4$

$x = \frac{4}{9}$

8. $8.\overline{62}$

① $x = 0.626262\dots$

2 places

$$\textcircled{2} 10^2 x = 10^2 (0.6262\dots)$$

$$100x = 62.6262\dots$$

$$8.\overline{62} = \boxed{8\frac{62}{99}}$$

$$\textcircled{3} 100x = 62.\overline{6262}\dots$$

$$\underline{-x = 0.\overline{6262}\dots}$$

$$99x = 62$$

$$x = \frac{62}{99}$$

9. $0.\overline{537}$

$$\textcircled{1} x = 0.\overline{5373737}\dots$$

↑
1 place

$$10^1 x = 10^1 (0.53737)$$

$$10x = 5.3737\dots$$

$$\textcircled{2} x = 0.\overline{5373737}\dots$$

↪
3 places

$$10^3 x = 10^3 (0.53737\dots)$$

$$1000x = 537.3737$$

$$\textcircled{3} 1000x = 537.\overline{3737}\dots$$

$$\underline{-10x = 5.\overline{3737}\dots}$$

$$990x = 532$$

$$x = \frac{532}{990} = \frac{532 \div 2}{990 \div 2} = \frac{266}{495}$$

$$0.\overline{537} = \boxed{\frac{266}{495}}$$

$$10. 0.163\overline{25}$$

$$\textcircled{1} x = 0.163255\dots$$

3 places

$$10^3 x = 10^3 (0.16325\dots)$$

$$1000x = 163.2525\dots$$

$$\textcircled{2} x = 0.1632525\dots$$

5 places

$$10^5 x = 10^5 (0.1632525\dots)$$

$$100,000x = 16325.2525\dots$$

$\textcircled{3}$

$$100,000x = 16325.2525\dots$$

$$-1000x = 163.2525\dots$$

$$9000x = 16162$$

$$x = \frac{16162}{9000} = \frac{16163 \div 2}{99000 \div 2} = \frac{8081}{49500}$$

$$0.163\overline{25} = \frac{8081}{49500}$$