

## CONVERTING BETWEEN FRACTIONS, DECIMALS AND PERCENTS

\* Remember to move the decimal point two digits to the right when converting a decimal to a percent (“d → p” ⇒ “move right”). Don’t forget to add the % symbol!

\* Remember to move the decimal point two digits to the left when converting a percent to a decimal (“d ← p” ⇒ “move left”). Don’t forget to remove the % symbol!

\* Remember, there are two ways to convert a fraction to a percent, (i) first convert it to a decimal (using long division) and then to a percent, or (ii) multiply by 100, and reduce the resulting fraction or rewrite as a decimal percent. Don’t forget to add the % symbol!

\* Remember, there are two ways to convert a percent to a fraction, (i) first convert it to a decimal, and then rewrite as a fraction and reduce, or (ii) multiply by  $\frac{1}{100}$  and reduce the resulting fraction. Don’t forget to remove the % symbol!

### Model Problems:

1. Rewrite each decimal as a percent: a) 0.8                  b) 0.08                  c) 0.008                  d) 8

Answers: (move decimal point two places to the right, and, recall, 8 = 8.00)

a) 80 %   b) 8 %                  c) 0.8 %                  d) 800 %

2. Rewrite each percent as a decimal: a) 11 %   b) 100 %                  c) 1.2 %                  d) 0.05%

Answers: (move decimal point two places to the left, adding zeros, if necessary, as placeholders)

a) 0.11                  b) 1                  c) 0.012                  d) 0.0005

3. Rewrite each fraction as a percent: a)  $\frac{1}{4}$                   b)  $\frac{2}{5}$                   c)  $\frac{5}{6}$

Answers:                  Method (i)                  a)  $\frac{1}{4} = 0.25 = 25\%$                   b)  $\frac{2}{5} = 0.4 = 40\%$                   c)  $\frac{5}{6} = 0.8\bar{3} = 83.\bar{3}\%$

Method (ii)                  a)  $\frac{1}{4} = \frac{1}{4} \times 100 = \frac{100}{4} = 25\%$                   b)  $\frac{2}{5} = \frac{2}{5} \times 100 = \frac{200}{5} = 40\%$

c)  $\frac{5}{6} = \frac{5}{6} \times 100 = \frac{500}{6} = 83.\bar{3}\%$

4. Rewrite each percent as a fraction: a) 30 %   b) 2.4 %                  c) 0.25 %

Answers:  
Method (i)

a)  $30\% = 0.3 = \frac{3}{10}$                   b)  $2.4\% = 0.024 = \frac{24}{1000} = \frac{3}{125}$                   c)  $0.25\% = 0.0025 = \frac{25}{10000} = \frac{1}{400}$

Method (ii)

$$\text{a) } 30\% = 30 \times \frac{1}{100} = \frac{30}{100} = \frac{3}{10} \quad \text{b) } 2.4\% = 2.4 \times \frac{1}{100} = \frac{2.4}{100} = \frac{24}{1000} = \frac{3}{25}$$

$$\text{c) } 0.25\% = 0.25 \times \frac{1}{100} = \frac{0.25}{100} = \frac{25}{10000} = \frac{1}{400}$$

### Practice Exercises:

Convert each decimal to a percent:

1. 0.075                      2. 0.00078                      3. 1.012                      4. 0.75    5. 0.000001                      6. 1

Convert each percent to a decimal:

7. 57 %                      8. 2.5 %                      9. 6 %                      10. 60 %                      11. 0.4%                      12. 103 %

Convert each fraction to a percent:

13.  $\frac{3}{4}$                       14.  $\frac{1}{2}$                       15.  $\frac{7}{20}$                       16.  $\frac{5}{8}$                       17.  $\frac{11}{16}$                       18.  $\frac{5}{12}$

Convert each percent to a fraction:

19. 15 %                      20. 0.1 %                      21. 4.2 %                      22. 1 %                      23. 75 %                      24. 25 %

### Answers:

- |    |          |     |       |     |                |     |                  |
|----|----------|-----|-------|-----|----------------|-----|------------------|
| 1. | 7.5 %    | 7.  | 0.57  | 13. | 75 %           | 19. | $\frac{3}{20}$   |
| 2. | 0.078 %  | 8.  | 0.025 | 14. | 50 %           | 20. | $\frac{1}{1000}$ |
| 3. | 101.2 %  | 9.  | 0.06  | 15. | 35 %           | 21. | $\frac{21}{500}$ |
| 4. | 75 %     | 10. | 0.6   | 16. | 62.5 %         | 22. | $\frac{1}{100}$  |
| 5. | 0.0001 % | 11. | 0.004 | 17. | 68.75 %        | 23. | $\frac{3}{4}$    |
| 6. | 100 %    | 12. | 1.03  | 18. | $41.\bar{6}\%$ | 24. | $\frac{1}{4}$    |