

# Converting Fractions and Decimals Assignment

Math 8

## ANSWERS

Convert each fraction to a decimal, then determine if its decimal expansion is repeating or terminating.

1.  $\frac{3}{125}$

$$\frac{3}{125} = \frac{3 \cdot 8}{125 \cdot 8} = \frac{24}{1,000} = 0.024$$

$$\frac{3}{125} = 0.024$$

A terminating decimal

2.  $3\frac{9}{20}$

$$3\frac{9}{20} = \frac{69}{20}$$

$$69 \div 20 = 3.45$$

$$\begin{array}{r} -60 \\ 90 \\ -80 \\ 100 \\ -100 \\ 0 \end{array}$$

$$3\frac{9}{20} = 3.45$$

A terminating decimal

3.  $\frac{9}{11}$

$$9 \div 11 = 0.81818 \dots \dots$$

$$\begin{array}{r} -0 \\ 90 \\ -88 \\ 20 \\ -11 \\ 90 \\ -88 \\ 20 \\ -11 \\ 90 \\ -88 \\ 2 \end{array}$$

$$\frac{9}{11} = 0.81818 \dots \dots$$

$$\frac{9}{11} = 0.\overline{81}$$

A repeating decimal

4.  $5\frac{5}{6}$

$$5\frac{5}{6} = \frac{35}{6}$$

$$35 \div 6 = 5.8333 \dots \dots$$

$$\begin{array}{r} -30 \\ 50 \\ -48 \\ 20 \\ -18 \\ 20 \\ -18 \\ 2 \end{array}$$

$$5\frac{5}{6} = \frac{35}{6} = 5.8333 \dots \dots$$

$$5\frac{5}{6} = 5.8\overline{3}$$

A repeating decimal

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$$\begin{array}{r}
 5. \quad 1 \frac{9}{16} \\
 1 \frac{9}{16} = \frac{25}{16} \\
 25 \div 16 = 1.5625 \\
 \begin{array}{r}
 -16 \\
 90 \\
 -80 \\
 100 \\
 -96 \\
 40 \\
 -32 \\
 80 \\
 -80 \\
 \hline
 \end{array}
 \end{array}$$

$$1 \frac{9}{16} = \frac{25}{16} = 1.5625$$

A terminating decimal

$$\begin{array}{r}
 6. \quad \frac{12}{99} \\
 12 \div 99 = 0.121212 \dots \\
 \begin{array}{r}
 -0 \\
 120 \\
 -99 \\
 210 \\
 -198 \\
 120 \\
 -99 \\
 210 \\
 -198 \\
 12
 \end{array}
 \end{array}$$

$$\begin{array}{l}
 \frac{12}{99} = 0.121212 \dots \\
 \frac{12}{99} = 0.\overline{12}
 \end{array}$$

A repeating decimal

Convert each terminating decimal to a fraction.

$$\begin{array}{l}
 7. \quad 0.012 \\
 0.012 \\
 0.012 = \frac{12}{1,000} = \frac{3 \cdot 4}{4 \cdot 250} = \frac{3}{250} \\
 0.012 = \frac{3}{250}
 \end{array}$$

$$\begin{array}{l}
 8. \quad 3.06 \\
 3.06 \\
 3.06 = 3 \frac{6}{100} = 3 \frac{2 \cdot 3}{2 \cdot 50} = 3 \frac{3}{50} \\
 3.06 = 3 \frac{3}{50}
 \end{array}$$

$$\begin{array}{l}
 9. \quad 129.0002 \\
 129.0002 \\
 129.0002 = 129 \frac{2}{10,000} = 129 \frac{2 \cdot 1}{2 \cdot 5,000} \\
 129.0002 = 129 \frac{1}{5,000}
 \end{array}$$

$$\begin{array}{l}
 10. \quad -13.104 \\
 -13.104 \\
 -13.104 = -13 \frac{104}{1,000} = -13 \frac{8 \cdot 13}{8 \cdot 125} \\
 -13.104 = -13 \frac{13}{125}
 \end{array}$$

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11. 50.24

$$50.24$$

$$50.24 = 50 \frac{24}{100} = 50 \frac{4 * 6}{4 * 25} = 50 \frac{6}{25}$$

$$50.24 = 50 \frac{6}{25}$$

12. -7.34

$$-7.34$$

$$-7.34 = -7 \frac{34}{100} = -7 \frac{2 * 17}{2 * 50} = -7 \frac{17}{50}$$

$$-7.34 = -7 \frac{17}{50}$$

Convert each repeating decimal to a fraction.

13. 0.5555555 ...

$$0.5555555 \dots$$

$$10x = 5.55555$$

$$- x = 0.55555$$


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$$9x = 5$$

$$x = \frac{5}{9}$$

14. 2.322222222 ...

$$2.322222222 \dots$$

$$100x = 232.2222222$$

$$- 10x = 23.2222222$$


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$$90x = 209$$

$$x = \frac{209}{90} = 2 \frac{29}{90}$$

15. 8.66666666 ...

$$8.66666666 \dots$$

$$10x = 86.6666666$$

$$- x = 8.6666666$$


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$$9x = 78$$

$$x = \frac{78}{9} = 8 \frac{6}{9}$$

$$x = 8 \frac{6}{9} = 8 \frac{2 * 3}{3 * 3} = 8 \frac{2}{3}$$

$$x = 8 \frac{2}{3}$$

16. 4.5181818 ...

$$4.5181818 \dots$$

$$1,000x = 4518.1818 \dots$$

$$- 10x = 45.1818$$


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$$990x = 4,473$$

$$x = \frac{4,473}{990} = \frac{9 * 497}{9 * 110}$$

$$x = \frac{497}{110} = 4 \frac{57}{110}$$

$$x = 4 \frac{57}{110}$$

# Converting Fractions and Decimals Assignment

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17.  $2.24\overline{6}$

$$\begin{aligned} 2.24\overline{6} \dots &= 2.2466666 \\ 1,000x &= 2246.66666 \\ - 100x &= 224.66666 \end{aligned}$$

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$$\begin{aligned} 900x &= 2,022 \\ x &= \frac{2,022}{900} = \frac{2 * 1,011}{2 * 450} \\ x &= \frac{1,011}{450} = 2 \frac{111}{450} \\ x &= 2 \frac{111}{450} \end{aligned}$$

18.  $2.83\overline{35}$

$$\begin{aligned} 2.83\overline{35} &= 2.83353535 \dots \dots \\ 10,000x &= 28,335.353535 \dots \dots \\ - 100x &= 283.353535 \end{aligned}$$

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$$\begin{aligned} 9,900x &= 28,052 \\ x &= \frac{28,052}{9,900} = \frac{4 * 7,013}{4 * 2,475} \\ x &= \frac{7,013}{2,475} \\ x &= 2 \frac{2063}{2,475} \end{aligned}$$