Name _____     Date_____

# Converting Between Fractions and Decimals Using Equivalent Fractions

1.  Write 3.0035 as a fraction.  Explain your process.

2.  This week is just one of 40 weeks that you spend in the classroom this school year.  Convert the fraction $\frac{1}{40}$ to decimal form.

1. Convert each terminating decimal to a fraction in its simplest form.

   a.   0.4

   b.   0.16

   c.   0.625

   d.   0.08

   e.   0.012

2. Convert each fraction or mixed number to a decimal using an equivalent fraction.

   a.   $\dfrac{4}{5}$

   b.   $\dfrac{3}{40}$

   c.   $\dfrac{8}{200}$

   d.   $3\dfrac{5}{16}$

3. Tanja is converting a fraction into a decimal by finding an equivalent fraction that has a power of 10 in the denominator.  Sara looks at the last step in Tanja's work (shown below) and says that she cannot go any further.  Is Sara correct?  If she is, explain why.  If Sara is incorrect, complete the remaining steps.

$$\frac{72}{480} = \frac{2^3 \cdot 3^2}{2^5 \cdot 3 \cdot 5}$$

1. Write $3.0035$ as a fraction. Explain your process.

   *The left-most decimal place is the ten-thousandths place, so the number in fractional form would be $3\frac{35}{10,000}$. There are common factors of $5$ in the numerator and denominator and dividing both by these results in the fraction $3\frac{7}{2,000}$.*

2. This week is just one of 40 weeks that you spend in the classroom this school year. Convert the fraction $\frac{1}{40}$ to decimal form.

$$\frac{1}{40} = \frac{1}{2^3 \times 5} \times \frac{5^2}{5^2}$$

$$\frac{5^2}{2^3 \times 5^3} = \frac{25}{1,000} = 0.025$$

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*Scaffolding:*

- Extend Exit Ticket Problem 2 by asking students to represent this week as a percentage of the school year.

  *Answer:* $2.5\%$

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1. Convert each terminating decimal to a fraction in its simplest form.

   a. $0.4$

   $$0.4 = \frac{2}{5}$$

   b. $0.16$

   $$0.16 = \frac{4}{25}$$

   c. $0.625$

   $$0.625 = \frac{5}{8}$$

   d. $0.08$

   $$0.08 = \frac{2}{25}$$

   e. $0.012$

   $$0.012 = \frac{3}{250}$$

2. Convert each fraction or mixed number to a decimal using an equivalent fraction.

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

   $$\frac{4}{5} = 0.8$$

   b. $\frac{3}{40}$

   $$\frac{3}{40} = 0.075$$

   c. $\frac{8}{200}$

   $$\frac{8}{200} = 0.04$$

   d. $3\frac{5}{16}$

   $$3\frac{5}{16} = 3.3125$$

3. Tanja is converting a fraction into a decimal by finding an equivalent fraction that has a power of $10$ in the denominator. Sara looks at the last step in Tanja's work (shown below) and says that she cannot go any further. Is Sara correct? If she is, explain why. If Sara is incorrect, complete the remaining steps.

$$\frac{72}{480} = \frac{2^3 \cdot 3^2}{2^5 \cdot 3 \cdot 5}$$

*Tanja can finish the conversion since there is a factor pair of 3's in the numerator and denominator that can be divided out with a quotient of 1.*

*Remaining Steps:*