

## High School Exit Program

### Lesson 9

#### EXERCISE 1 EQUIVALENT FRACTIONS

##### Textbook practice

a. Find part 1 of your textbook. √

- (Teacher reference:)

Sample Problem
$\frac{3}{5} \left( \frac{\blacksquare}{\blacksquare} \right) = \frac{18}{30}$
$\frac{3}{5} \left( \frac{6}{6} \right) = \frac{18}{30}$

b. You've worked equivalent fraction problems by multiplying a fraction by a fraction that equals one.

- For these problems, the equivalent fractions are shown. You're going to figure out the fraction that equals one.

- The problem in the box shows  $3/5 = 18/30$ .

You figure out the fraction that equals one by working the problem for the numerator and the problem for the denominator.

- c. The problem for the numerator is: 3 times some value equals 18.
- Say the problem for the numerator. (Signal.) *3 times some value equals 18.*

(Repeat step c until firm.)

- d. What's the missing value? (Signal.) 6.
- Say the problem for the denominator. (Signal.) *5 times some value equals 30.*
  - What's the missing value? (Signal.) 6.
  - The fraction that equals 1 is  $\frac{6}{6}$ .
- e. Problem A:  $\frac{4}{9}$  times some value equals  $\frac{20}{45}$ .
- I'll say the problem for the numerator: 4 times some value equals 20.
  - Say that problem. (Signal.) *4 times some value equals 20.*
  - What's the missing value? (Signal.) 5.
  - Say the problem for the denominator. (Signal.) *9 times some value equals 45.*
  - Copy the problem and write the missing fraction.

Pencils down when you're finished.

(Observe students and give feedback.)

- Check your work.
- (Write on the board:)

$$\text{a. } \frac{4}{9} \left( \frac{5}{5} \right) = \frac{20}{45}$$

f. Problem B:  $\frac{3}{8}$  times some value equals  $\frac{6}{16}$ .

- Say the problem for the numerator. (Signal.) *3 times some value equals 6.*

- Say the problem for the denominator.  
(Signal.) *8 times some value equals 16.*

- Copy the problem and work it. Pencils down when you're finished.

(Observe students and give feedback.)

- Check your work.
- Everybody, what's the missing fraction? (Signal.)  $\frac{2}{2}$ .
- Read the whole equation. (Signal.)  $\frac{3}{8} \times \frac{2}{2} = \frac{6}{16}$ .

g. Problem C:  $\frac{6}{7}$  times some value equals  $\frac{54}{63}$ .

- Say the problem for the numerator. (Signal.) *6 times some value equals 54.*

- Say the problem for the denominator. (Signal.) *7 times some value equals 63.*
  - Copy the problem and work it. Pencils down when you're finished.  
(Observe students and give feedback.)
  - Everybody, what's the missing fraction? (Signal.) *9/9.*
  - Read the whole equation. (Signal.) *6/7 times 9/9 = 54/63.*
- h. Problem D: *4/7 times some fraction equals 12/21.*
- Say the problem for the numerator. (Signal.) *4 times some value equals 12.*
  - Say the problem for the denominator. (Signal.) *7 times some value equals 21.*
  - Copy the problem and work it. Pencils down when you're finished.  
(Observe students and give feedback.)
  - Everybody, what's the missing fraction? (Signal.) *3/3.*
  - Read the whole equation. (Signal.) *4/7 times 3/3 = 12/21.*

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#### EXERCISE 2 DECIMAL MULTIPLICATION

##### Textbook Practice

- a. Find part 2 of your textbook. ✓
- b. When you multiply decimal numbers, you don't line up the decimal points. You just do the multiplication the same way you do for whole numbers. After you have all the digits in the answer, you figure out where the decimal point goes. The box gives the rules for placing the decimal point.

- Teacher reference:

- Count the decimal places in the numbers that are multiplied.
- Show the same number of decimal places in the answer.

- What's the first rule? (Signal.) *Count the decimal places in the numbers that are multiplied.*
- What's the next rule? (Signal.) *Show the same number of decimal places in the answer.*

- So if the **problem** has a total of 5 decimal places, the **answer** will show 5 decimal places.
- If the problem has a total of **3** decimal places, how many decimal places will you show in the answer?  
(Signal.) 3.

- c. You can see an example: 5.63 times 7.2.
- How many decimal places in 5.63? (Signal.) 2.
  - How many decimal places in 7.2? (Signal.) 1.
  - So how many total decimal places are in the problem?  
(Signal.) 3. Yes, 2 and 1. That's 3.
  - So how many decimal places will there be in the answer? (Signal.) 3.

(Repeat step c until firm.)

- d. To work this problem, you first do the multiplication and write the digits in the answer. The problem is worked.
- The digits in the answer are: 40536.
  - We show 3 decimal places in the answer. We start with 6 and count 3 places. So the decimal point comes right in front of the 5.
  - Everybody, what's the answer? (Signal.) 40.536.

- e. Remember, figure out the total decimal places that are in the problem. Show the same number of decimal places in the answer.

**Textbook practice**

- a. Find part 3 of your textbook.  $\sqrt{\quad}$
- The multiplication is shown for the problems. You're going to figure out how many decimal places are in the answer.
- b. Problem A. How many decimal places are in 1.222?  
(Signal.) 3.
- How many decimal places are in .27? (Signal.) 2.
  - So how many total decimal places are in the problem?  
(Signal.) 5.
  - That's how many decimal places will be in the answer.
- c. Problem B. How many decimal places are in .679?  
(Signal.) 3.
- 5 does not have a decimal point. So there are no places to count. How many decimal places are in 5?  
(Signal.) *Zero*.
  - So how many total decimal places are in the problem?  
(Signal.) 3.

- Yes, 3 for one number and zero for the other number.

So how many decimal places will be in the answer?

(Signal.) 3.

(Repeat steps b and c until firm.)

- d. The digits in each answer are shown.
- e. Problem A. Raise your hand when you know the total

number of decimal places in the problem.  $\surd$

- Everybody, how many? (Signal.) 5.
- So how many decimal places will be in the answer?  
(Signal.) 5.
- Copy the answer for problem A and put the decimal point in the right place. Start at the end of the number and count back 5 places. Pencils down when you're finished. (Observe students and give feedback.)
- (Write on the board:)

**a.** .32994

- Here's what you should have.
- f. Copy the answers for the rest of the problems and put each decimal point where it belongs. Pencils down when you're finished.

(Observe students and give feedback.)

g. Check your work.

• (Write to show:)

**a.** .32994

**d.** 2.5245

**b.** 3.395

**e.** 91.3

**c.** 25.664

• Here's what you should have for each decimal answer.

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#### EXERCISE 3 EF STRINGS

##### Textbook practice

- a. Find part 4 of your textbook. ✓
- b. Equation A. All these fractions will equal 6. So you multiply the denominators by 6 to get the numerators.
- c. Touch the first fraction. ✓
  - What's the denominator? (Signal.) 9.
  - Start with 6 and say the problem you'll work.  
Signal.)  $6 \times 9$ .
- d. Touch the next fraction. ✓
  - Say the problem you'll work. (Signal.)  $6 \times 3$ .
- e. Copy the problem and write all the missing numerators. Pencils down when you're finished.  
(Observe students and give feedback.)
- f. Everybody, read the complete equation.  
(Signal.)  $6 = 54/9 = 18/3 = 30/5 = 60/10$ .

- (Write on the board:)

$$\mathbf{a.} \quad 6 = \frac{54}{9} = \frac{18}{3} = \frac{30}{5} = \frac{60}{10}$$

- Here's what you should have.
- g. Equation B. Copy the problem and write the missing numerators. Pencils down when you're finished.

(Observe students and give feedback.)

- h. Everybody, read the whole equation.

(Signal.)  $3 = 45/15 = 12/4 = 33/11 = 21/7$ .

- (Write on the board:)

$$\mathbf{b.} \quad 3 = \frac{45}{15} = \frac{12}{4} = \frac{33}{11} = \frac{21}{7}$$

- Here's what you should have.

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#### EXERCISE 4 DECIMAL ROUNDING

##### Textbook practice

- a. Find part 5 of your textbook. ✓
  - You're going to write each decimal value rounded to tenths. So the tenths digit will be the last digit in each rounded value.
- b. Touch the tenths digit in value A. ✓
  - What digit? (Signal.) 3.
  - So that digit will round to either 3 or 4.
- c. Touch the tenths digit in value B. ✓
  - What digit? (Signal.) 9.
  - Be careful. The rounded tenths digit will be either 9 or zero.
- d. Touch the tenths digit in value C. ✓
  - What digit? (Signal.) 5.
  - So that digit will round to either 5 or 6.
- e. Value A. Copy the value that is written and underline the tenths digit. ✓

- (Write on the board:)

tenths

a. 10.3547

- Here's what you should have.
- Below, write the value rounded to tenths.

Remember to write the whole number part and the rounded tenths digit. The last digit in the rounded value will be either 3 or 4.

- (Write to show:)

tenths

a. 10.3547

10.4

- Here's what you should have.
  - Read the rounded value. (Signal.) *10.4*.
- f. Value B. Copy the number. Underline the tenths digit. Below, write the value rounded to tenths.

- (Write to show:)

tenths

a. 10.3547

10.4

b. 0.9856

1.0

- Here's what you should have.
- Read the rounded value. (Signal.) *1.0*.

Yes, 1.0. You rounded 9/10 to 10/10.

That's 1 and zero tenths.

- g. Work the rest of the problems. Copy the value shown. Underline the tenths digit. Below, write the value rounded to tenths. Pencils down when you're finished. (Observe students and give feedback.)
- h. Check your work.

- (Write to show:)

tenths

a. 10.3547

10.4

b. 0.9856

1.0

c. 7.501

7.5

d. 1.42703

1.4

e. .75292

.8

- Here's what you should have.
- Value C. Read the rounded value. (Signal.) 7.5.
- Value D. Read the rounded value. (Signal.) 1.4.
- Value E. Read the rounded value. (Signal.) .8.
- i. Now you'll write each decimal value rounded to **hundredths**. Copy value A and underline the hundredths digit. ✓
- Everybody, what's the hundredths digit? (Signal.) 5.
- Below, write the value rounded to hundredths.  
Remember, the last digit will be either 5 or 6.

- (Write to show:)

tenths	hundredths
a. 10. <u>3</u> 547 10.4	a. 10.3547 10.3 <u>5</u>
b. 0. <u>9</u> 856 1.0	
c. 7. <u>5</u> 01 7.5	
d. 1. <u>4</u> 2703 1.4	
e. <u>.7</u> 5292 .8	

- Here's what you should have.
- j. Work the rest of the items. Copy each number.  
Underline the hundredths digits. Below, show the value rounded to hundredths. Pencils down when you're finished.  
(Observe students and give feedback.)

- (Write to show:)

tenths	hundredths
<b>a.</b> 10. <u>3</u> 547 10.4	<b>a.</b> 10.3 <u>5</u> 47 10.35
<b>b.</b> 0. <u>9</u> 856 1.0	<b>b.</b> 0.9 <u>8</u> 56 0.99
<b>c.</b> 7. <u>5</u> 01 7.5	<b>c.</b> 7.5 <u>0</u> 1 7.50
<b>d.</b> 1. <u>4</u> 2703 1.4	<b>d.</b> 1.4 <u>2</u> 703 1.43
<b>e.</b> <u>.7</u> 5292 .8	<b>e.</b> <u>.7</u> 5292 .75

- Here's what you should have. You'll read each value rounded to hundredths, starting with value B.
- Read value B. (Signal.) *0.99.*
- Read value C. (Signal.) *7.50.*
- Read value D. (Signal.) *1.43.*
- Read value E. (Signal.) *.75.*

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#### EXERCISE 5 PERIMETER

##### Textbook practice

- a. Find part 6 of your textbook.  $\surd$ 
  - You'll find the area and the perimeter for both rectangles. Pencils down when you're finished.  
(Observe students and give feedback.)
- b. Check your work.
- c. Rectangle A.
  - What's the area? (Signal.) *1276 square inches.*
  - What's the perimeter? (Signal.) *160 inches.*
- d. Rectangle B.
  - What's the area? (Signal.) *108 square centimeters.*
  - What's the perimeter? (Signal.) *62 centimeters.*

#### EXERCISE 6 INDEPENDENT WORK

Assign Independent Work textbook parts 7–13.