

## Lesson 8: Equivalent Ratios Defined Through the Value of a Ratio

### Classwork

#### Exercise 1

Circle any equivalent ratios from the list below.

Ratio: 1:2

Ratio: 5:10

Ratio: 6:16

Ratio: 12:32

Find the value of the following ratios, leaving your answer as a fraction, but re-write the fraction using the largest possible unit.

Ratio: 1:2                      Value of the Ratio:

Ratio: 5:10                     Value of the Ratio:

Ratio: 6:16                     Value of the Ratio:

Ratio: 12:32                    Value of the Ratio:

What do you notice about the value of the equivalent ratios?

#### Exercise 2

Here is a theorem:

*If two ratios are equivalent, then they have the same value.*

Can you provide any counter-examples to the theorem above?



**Lesson Summary**

The value of the ratio  $A : B$  is the quotient  $\frac{A}{B}$ .

If two ratios are equivalent, they have the same value.

**Problem Set**

- The ratio of the number of shaded sections to the number of unshaded sections is 4 to 2. What is the value of the ratio of the number of shaded pieces to the number of unshaded pieces?
- Use the value of the ratio to determine which ratio(s) is equivalent to 7: 15.
  - 21: 45
  - 14: 45
  - 3: 5
  - 63: 135
- Sean was at batting practice. He swung 25 times but only hit the ball 15 times.
  - Describe and write more than one ratio related to this situation.
  - For each ratio you created, use the value of the ratio to express one quantity as a fraction of the other quantity.
  - Make up a word problem that a student can solve using one of the ratios and its value.
- Your middle school has 900 students.  $\frac{1}{3}$  of the students bring their lunch instead of buying lunch at school. What is the value of the ratio of the number of students who do bring their lunch to the number of students who do not?

