Equivalent Ratios Worksheet Questions and Answers PDF

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Part 1: Building a Foundation

What is a ratio?

Hint: Think about how two quantities can be compared.

- ◯ **A) A comparison of two quantities ✓**
- ◯ B) A type of fraction
- ◯ C) A multiplication of two numbers
- ◯ D) A division of one number by another

> A ratio is a comparison of two quantities.

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> A ratio is a comparison of two quantities.

Which of the following can be used to find equivalent ratios? (Select all that apply)

Hint: Consider operations that maintain the relationship between the two quantities.

- ☐ A) Adding the same number to both terms
- ☐ **B) Multiplying both terms by the same number ✓**
- ☐ **C) Dividing both terms by the same number ✓**
- ☐ D) Subtractin the same number from both terms

Equivalent ratios can be found by multiplying or dividing both terms by the same number.

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Hint: Consider operations that maintain the ratio.

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- [ ] D) Subtractin the same number from both terms

Equivalent ratios can be found by multiplying or dividing both terms by the same number.

Explain what it means for two ratios to be equivalent. Provide an example.

Hint: Think about how two ratios can represent the same relationship.

Two ratios are equivalent if they represent the same relationship between quantities. For example, 1:2 and 2:4 are equivalent ratios.

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Two ratios are equivalent if they represent the same relationship between quantities.

List two methods to verify if two ratios are equivalent.

Hint: Consider mathematical operations that can be applied to both ratios.

1. Method 1

> Cross-multiply the ratios.

2. Method 2

> Simplify both ratios to their lowest terms.

> You can verify if two ratios are equivalent by cross-multiplying or simplifying both ratios to their lowest terms.

Part 2: comprehension and Application

Which statements are true about simplifying ratios? (Select all that apply)

Hint: Consider the process of reducing ratios to their simplest form.

- [ ] A) Simplifying a ratio changes its value.
- [ ] **B) Simplifying a ratio involves dividing both terms by their greatest common divisor. ✓**
- [ ] **C) Simplifying a ratio makes it easier to compare with other ratios. ✓**
- [ ] **D) Simplifying a ratio is the same as finding an equivalent ratio. ✓**

> Simplifying ratios involves dividing both terms by their greatest common divisor, and it does not change the value of the ratio.

Which statements are true about simplifying ratios? (Select all that apply)

Hint: Consider the effects of simplifying on the value of the ratio.

- [ ] A) Simplifying a ratio changes its value.
- [ ] **B) Simplifying a ratio involves dividing both terms by their greatest common divisor. ✓**

- [x] **C) Simplifying a ratio makes it easier to compare with other ratios. ✓**
- [x] **D) Simplifying a ratio is the same as finding an equivalent ratio. ✓**

Simplifying a ratio involves dividing both terms by their greatest common divisor.

A map uses a scale of 1:100,000. If the distance between two cities on the map is 3 cm, what is the actual distance between the cities in kilometers?

Hint: Use the scale to convert the map distance to actual distance.

The actual distance can be calculated by multiplying the map distance by the scale factor.

A map uses a scale of 1:100,000. If the distance between two cities on the map is 3 cm, what is the actual distance between the cities in kilometers?

Hint: Use the scale to convert the map distance to actual distance.

The actual distance is 3 cm * 100,000 cm = 300,000 cm, which is 3 km.

You have a recipe that calls for a ratio of 2 cups of flour to 3 cups of sugar. If you want to make a half batch, what is the equivalent ratio of flour to sugar?

Hint: Think about how to halve both parts of the ratio.

1. Flour

> 1 cup

2. Sugar

> 1.5 cups

> The equivalent ratio for a half batch is 1 cup of flour to 1.5 cups of sugar.

Part 3: Analysis, Evaluation, and Creation

Analyze the following scenarios and identify which ones demonstrate equivalent ratios. (Select all that apply)

Hint: Look for relationships that maintain the same ratio.

- [ ] **A) A car travels 60 miles in 1 hour and 120 miles in 2 hours. ✓**
- [ ] **B) A recipe uses 2 eggs for every 3 cups of flour and 4 eggs for every 6 cups of flour. ✓**
- [ ] **C) A painting is 4 feet wide and 6 feet tall, and another painting is 8 feet wide and 12 feet tall. ✓**
- [ ] D) A school has 30 teachers and 300 students, and another school has 20 teachers and 200 students.

> The scenarios that demonstrate equivalent ratios are those that maintain the same relationship between quantities.

Analyze the following scenarios and identify which ones demonstrate equivalent ratios. (Select all that apply)

Hint: Look for relationships that maintain the same ratio.

- [ ] **A) A car travels 60 miles in 1 hour and 120 miles in 2 hours. ✓**
- [ ] **B) A recipe uses 2 eggs for every 3 cups of flour and 4 eggs for every 6 cups of flour. ✓**
- [ ] **C) A painting is 4 feet wide and 6 feet tall, and another painting is 8 feet wide and 12 feet tall. ✓**
- [ ] **D) A school has 30 teachers and 300 students, and another school has 20 teachers and 200 students.** ✓

> Equivalent ratios can be identified by comparing the relationships in each scenario.

Evaluate the following statement: "If two ratios are equivalent, then they must have the same terms." Is this statement true or false? Explain your reasoning.

Hint: Consider the definition of equivalent ratios.

The statement is false; equivalent ratios can have different terms but represent the same relationship.

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