## <u>Reasoning and Problem Solving</u> <u>Step 20: Using Fractions as Operators</u>

## National Curriculum Objectives:

Mathematics Year 5: (5C8c) <u>Solve problems involving multiplication and division, including</u> scaling by simple fractions and problems involving simple rates

## **Differentiation:**

Questions 1, 4 and 7 (Problem Solving) Developing Find the missing unit fraction to complete the statements. Expected Find the missing non-unit fraction to complete the statements. Greater Depth Find the missing improper fraction to complete the statements.

Questions 2, 5 and 8 (Reasoning) Developing Explain which statement is the odd one out. Includes unit fractions only. Expected Explain which statement is the odd one out. Includes non-unit fractions in their simplest form.

Greater Depth Explain which statement is the odd one out. Questions include non-unit fractions and improper fractions.

Questions 3, 6 and 9 (Reasoning)

**Developing** Identify the correct statement about fractions as operators and explain why. Includes unit fractions only.

Expected Identify the correct statement about fractions as operators and explain why. Includes non-unit fractions in their simplest form.

Greater Depth Identify the correct statement about fractions as operators and explain why. Questions include non-unit fractions and improper fractions.

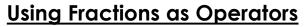
## More <u>Year 5 Fractions</u> resources.

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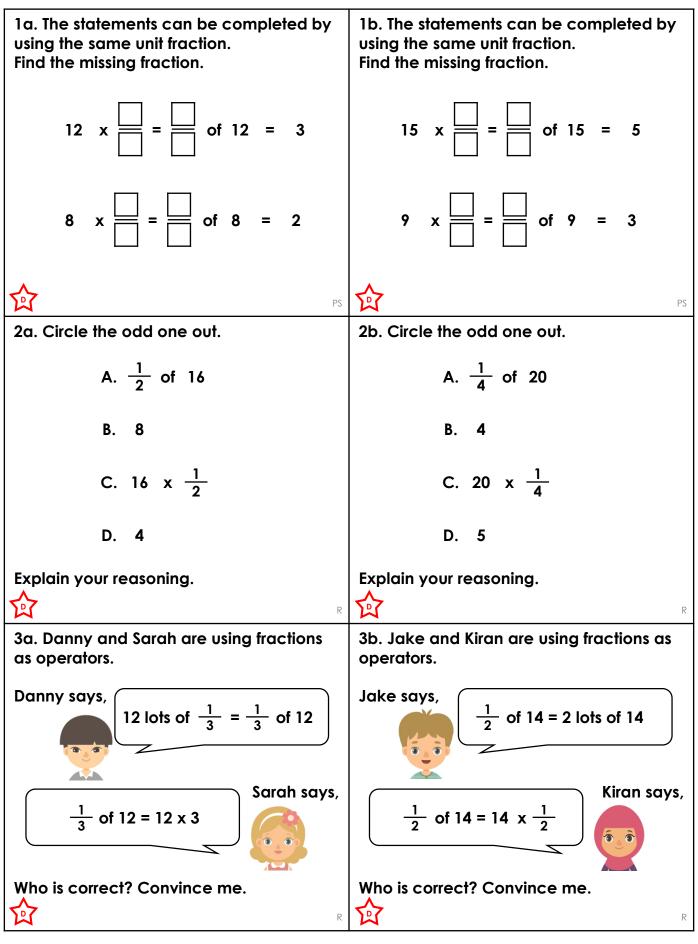


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Reasoning and Problem Solving – Using Fractions as Operators – Teaching Information



## **Using Fractions as Operators**



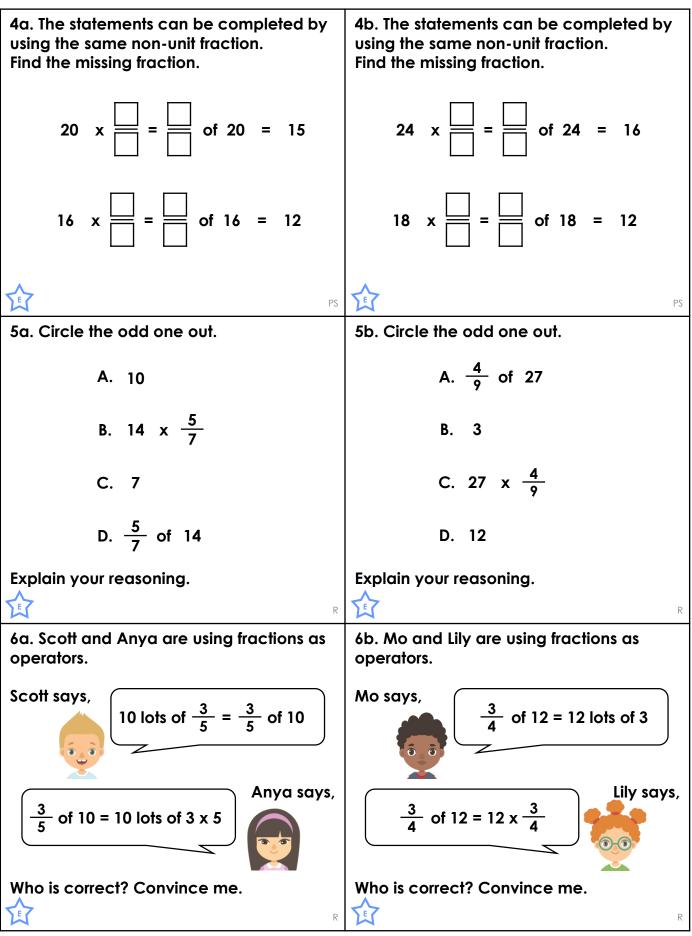
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Reasoning and Problem Solving – Using Fractions as Operators – Year 5 Developing





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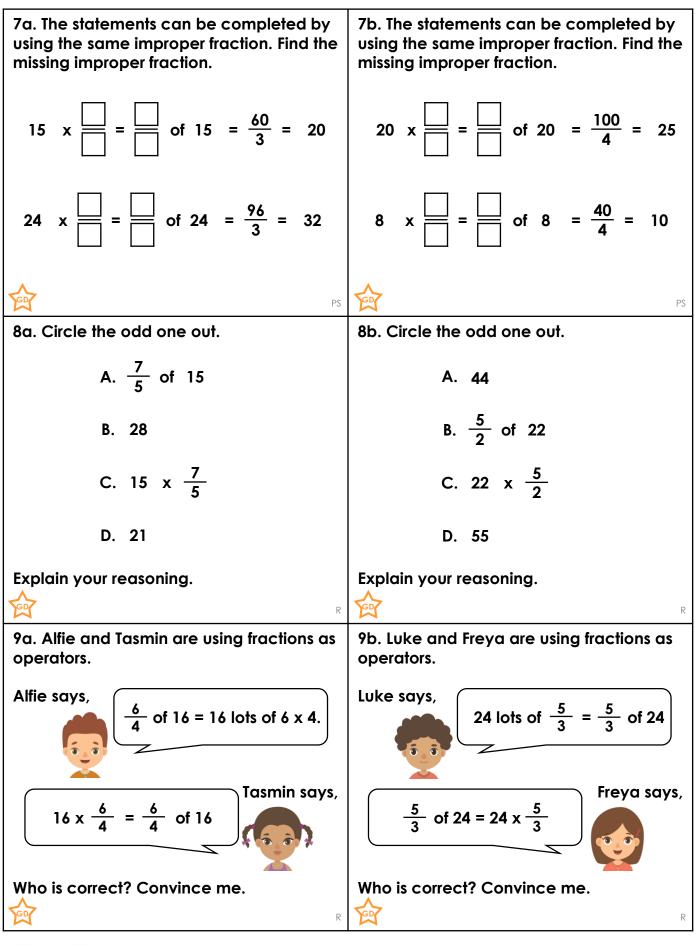
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Reasoning and Problem Solving – Using Fractions as Operators – Year 5 Expected

## Using Fractions as Operators

### **Using Fractions as Operators**



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Reasoning and Problem Solving – Using Fractions as Operators – Year 5 Greater Depth

### Reasoning and Problem Solving Using Fractions as Operators

#### Developing

1a.  $\frac{1}{4}$ 2a. D is the odd one out because A and C = B.

3a. Various answers, for example: Danny is correct because he has used
commutativity. Sarah is incorrect because
12 needs to be divided by 3 rather than multiplied.

#### **Expected**

4a.  $\frac{3}{4}$ 5a. C is the odd one out because B and D = A. 6a. Various answers, for example: Scott is correct because he has used commutativity. Anya is incorrect because 10 lots of 3 x 5 = 150 where as  $\frac{3}{5}$  of 10 = 6.

**Greater Depth** 7a.  $\frac{4}{3}$ 8a. B is the odd one out because A and C = D. 9a. Various answers, for example: Tasmin is correct because she has used commutativity. Alfie is incorrect because he should have done 16 lots of  $\frac{6}{4}$  instead of 16 lots of 6 x 4.

### <u>Reasoning and Problem Solving</u> <u>Using Fractions as Operators</u>

#### Developing

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

2b. B is the odd one out because A and C = D.

3b. Various answers, for example: Kiran is correct because she has used commutativity. Jake is incorrect because 14 needs to be divided by 2 rather than multiplied.

#### **Expected**

 $4b.\frac{2}{3}$ 

5b. B is the odd one out because A and C = D.

6b. Various answers, for example: Lily is correct because she has used commutativity. Mo is incorrect because he should do 12 lots of three quarters instead of 12 lots of three.

# Greater Depth

7b. <u>5</u>

8b. A is the odd one out because B and C = D.

9b. Various answers, for example: Luke and Freya are correct. They have both used commutativity. 'Lots of' means the same as multiplying.

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Reasoning and Problem Solving – Using Fractions as Operators ANSWERS