

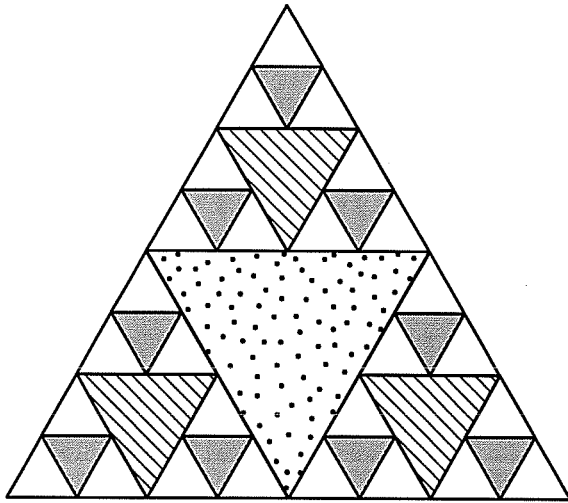
Enrichment Packet #17

Due: Monday

NAME: _____

Triangle Fractions

Visual Thinking



1. What fraction of a striped triangle is a shaded triangle? What fraction of the spotted triangle is a shaded triangle? Use $>$, $<$, or $=$ to compare the two fractions.

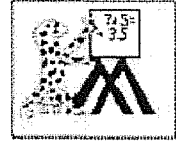
2. What fraction of the spotted triangle is a white triangle? What fraction of a striped triangle is three shaded triangles? Use $>$, $<$, or $=$ to compare the two fractions.

3. What fraction of the spotted triangle is two striped triangles? What fraction of the largest triangle is one spotted triangle? Use $>$, $<$, or $=$ to compare the two fractions.

4. What fraction of the largest triangle is one striped triangle? What fraction of the largest triangle is four shaded triangles? Use $>$, $<$, or $=$ to compare the two fractions.

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HOW TO MULTIPLY FRACTIONS

Frazer says "To multiply a fraction by an integer or another fraction, follow these 2 easy steps."



Step 1

(If one of the numbers in an integer, put it over a denominator of 1.)

- Multiply the numerators together, then multiply the denominators
- This will give you the answer.

Step 2 (optional)

- You may want to convert the fraction into its simplest form and convert it back to a mixed fraction (if it is an improper fraction).

In Example 2, the answer has been given as a mixed number. In Example 3 the answer has been left as an improper fraction in simplest form.

$$\text{Example 1} \quad \frac{3}{4} \times \frac{2}{3} = \frac{3 \times 2}{4 \times 3} = \frac{6}{12} = \frac{1}{2}$$

$$\text{Example 2} \quad \frac{9}{4} \times \frac{3}{5} = \frac{9 \times 3}{4 \times 5} = \frac{27}{20} = 1 \frac{7}{20}$$

$$\text{Example 3} \quad \frac{5}{12} \times 8 = \frac{5}{12} \times \frac{8}{1} = \frac{5 \times 8}{12 \times 1} = \frac{40}{12} = \frac{10}{3}$$



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MULTIPLYING FRACTIONS BY AN INTEGER 1

To multiply a fraction by an integer, simply multiply the numerator by the integer.

Remember also that $\frac{1}{3} \times 5$ is the same as $\frac{1}{3}$ of 5.



Example $\frac{2}{5} \times 6 = \frac{2 \times 6}{5} = \frac{12}{5}$

Multiply these fractions, leaving your answer as an improper fraction where appropriate.

1) $\frac{1}{3} \times 5 = \frac{\quad}{3}$ 2) $\frac{1}{5}$ of 7 = $\frac{\quad}{5}$ 3) $8 \times \frac{1}{7} = \frac{\quad}{7}$

4) $\frac{2}{3}$ of 4 = $\frac{\quad}{3}$ 5) $\frac{1}{6} \times 11 = \frac{\quad}{6}$ 6) $\frac{3}{4} \times 3 = \frac{\quad}{4}$

7) $2 \times \frac{4}{5} = \frac{\quad}{5}$ 8) $4 \times \frac{2}{9} = \frac{\quad}{9}$ 9) $9 \times \frac{1}{2} = \frac{\quad}{2}$

10) $\frac{1}{8}$ of 15 = $\frac{\quad}{8}$ 11) $\frac{2}{7} \times 6 = \frac{\quad}{7}$ 12) $8 \times \frac{3}{7} = \frac{\quad}{7}$

13) $7 \times \frac{5}{6} = \frac{\quad}{6}$ 14) $6 \times \frac{4}{9} = \frac{\quad}{9}$ 15) $\frac{2}{7} \times 8 = \frac{\quad}{7}$

16) $\frac{3}{8} \times 11 = \frac{\quad}{8}$ 17) $\frac{4}{7}$ of 9 = $\frac{\quad}{7}$ 18) $11 \times \frac{5}{6} = \frac{\quad}{6}$

19) $12 \times \frac{4}{5} = \frac{\quad}{5}$ 20) $\frac{2}{7} \times 16 = \frac{\quad}{7}$ 21) $24 \times \frac{1}{9} = \frac{\quad}{9}$

22) $11 \times \frac{3}{10} = \frac{\quad}{10}$ 23) $\frac{7}{8} \times 9 = \frac{\quad}{8}$ 24) $13 \times \frac{4}{11} = \frac{\quad}{11}$

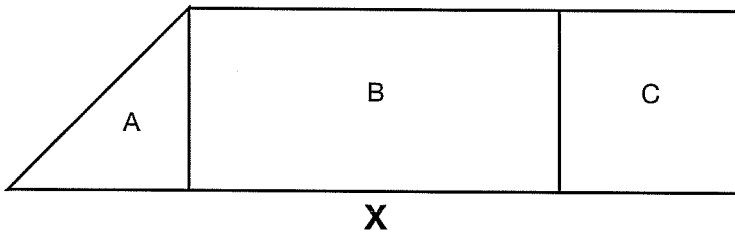


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Shape Fractions

Visual Thinking

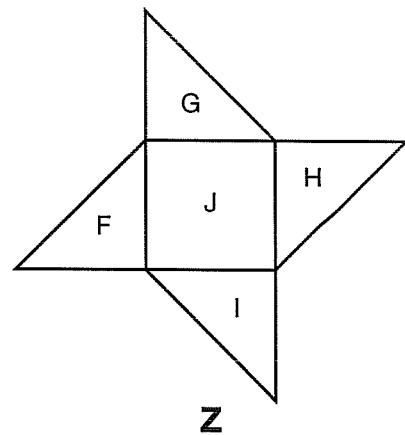


1. What fraction of trapezoid X is square C? Explain your answer.

2. What fraction of trapezoid X is rectangle B? Explain your answer.

3. What fraction of trapezoid X is triangle A? Explain your answer.

4. What fraction of shape Z is square J?
Explain your answer.



5. What fraction of shape Z is triangle G? Explain.

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HOW TO DIVIDE MIXED FRACTIONS

Before you tackle this, you need to know about multiplying fractions.

Frazer says "To divide mixed fractions follow these 4 easy steps."



Step 1

Convert any mixed fractions into *improper* fractions. Any *integers* (whole numbers) should be written as fractions with a denominator of 1.

Step 2

Swap the numerator and denominator of the dividend fraction and change the operand to a 'x' instead of a '÷'.

Step 3

Multiply the numerators of the fractions together, and the denominators of the fractions together. This will give you the answer.

Step 4 (Optional)

You may want to convert the fraction into its simplest form and convert it back to a mixed fraction (if it is an improper fraction).

$$\text{Example 1} \quad 3 \frac{1}{3} \div 1 \frac{5}{6} = \frac{10}{3} \div \frac{11}{6} = \frac{10}{3} \times \frac{6}{11} = \frac{60}{33} = 1 \frac{9}{11}$$

$$\text{Example 2} \quad 4 \div 2 \frac{1}{3} = \frac{4}{1} \div \frac{7}{3} = \frac{4}{1} \times \frac{3}{7} = \frac{12}{7} = 1 \frac{5}{7}$$

$$\text{Example 3} \quad 2 \frac{3}{4} \div 5 = \frac{11}{4} \div \frac{5}{1} = \frac{11}{4} \times \frac{1}{5} = \frac{11}{20}$$

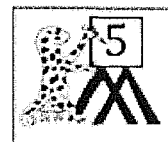


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DIVIDING MIXED FRACTIONS SHEET 1

To divide mixed fractions, follow these three simple steps:

- Convert the mixed fractions into improper fractions
- Invert the divisor fraction (swap the numerator and denominator of the second fraction) and change the division operator to a multiplication operator.
- Note – if the divisor is an integer (Example 2), re-write it as a fraction with a denominator of 1, then invert it.
- multiply the two fractions together.

Example 1 $2 \frac{3}{4} \div 1 \frac{2}{5} = \frac{11}{4} \div \frac{7}{5} = \frac{11}{4} \times \frac{5}{7} = \frac{55}{28}$

Example 2 $1 \frac{2}{5} \div 4 = \frac{7}{5} \div \frac{4}{1} = \frac{7}{5} \times \frac{1}{4} = \frac{7}{20}$

Work out these fraction divisions. Your answer can be left as an improper fraction and does not need to be in simplest form.

1) $1 \frac{1}{3} \div \frac{1}{2} = \frac{\quad}{3} \times \frac{2}{1} = \frac{\quad}{3}$ 2) $1 \frac{1}{4} \div \frac{3}{4} = \frac{\quad}{4} \times \frac{4}{3} = \frac{\quad}{12}$

3) $2 \frac{2}{5} \div 3 = \frac{\quad}{5} \times \frac{1}{3} = \frac{\quad}{10}$ 4) $3 \frac{1}{3} \div \frac{3}{5} = \frac{\quad}{3} \times \frac{\quad}{3} = \frac{\quad}{9}$

5) $4 \frac{1}{2} \div \frac{2}{5} = \frac{\quad}{2} \times \frac{\quad}{5} = \frac{\quad}{\quad}$ 6) $2 \frac{3}{5} \div 4 = \frac{\quad}{5} \times \frac{\quad}{4} = \frac{\quad}{\quad}$

7) $2 \frac{4}{5} \div 1 \frac{1}{3} = \frac{\quad}{5} \times \frac{\quad}{3} = \frac{\quad}{\quad}$ 8) $3 \frac{4}{5} \div 2 = \frac{\quad}{5} \times \frac{\quad}{2} = \frac{\quad}{\quad}$



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