

Lesson 8: Apply Fraction Multiplication

• Let's solve problems about flags.

Warm-up: Number Talk: Fraction Multiplication

Find the value of each expression mentally.



8.1: Flags

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Afghanistan	Albania Brazil	Algeria Bulgaria	Argentina	Australia	Austria Cambodia	Bahamas	Barbados	Belgium	Bermuda
Chad	★ Chile	China (Rep. of)	Colombia	Congo (Rep. of)	Congo DR	Costa Rica	Cuba	Cyprus	Czechoslovakia
Dahomey	Denmark	Dominican Rep.	*** Dutch Antilles	Dutch Guiana*	East Germany	Ecuador	U Salvador	Ethiopia	FIJI
Finland	France	Gabon	Gambia	Ghana	Greece	Guatemala	Guinea	Guyana	Haiti
* * * * * *	Hong Kong	Hungary	Iceland	India	Indonesia	Fran	★ ★ ★	Ireland	Israel
Italy	lvory Coast	Jamaica	Japan	Jordan	Kenya	Kuwait	Laos	A Lebanon	Liberia
C*	iiii: Liechtenstein	Luxemburg	Madagascar	Malawi	Malaysia	Mali	Maita	Mauritania	Mexico
Monaco	Mongolia	Morocco	Nepal	Netherlands	* * * * New Zealand	(S) Nicaragua	Niger	Nigeria	Rorth Korea
North Vietnam	Norway	Pakistan	★ ★ Panama	Paraguay	★ ** PR of China	Peru	Philippines	Poland	Portugal
Puerto Rico	Rhodesia	Romania	Rwanda	San Marino	Saudi Arabia	Senegal	Sierra Leone	Singapore	Somalia
æ ∰⊏ South Africa	South Korea	South Vietnam	* South Yemen	Soviet Union	Spain	Sudan	Sweden	Switzerland	★ ★ ★ Syria
Tanzania	Thailand	Togo	Tonga	Trinidad-Tobago	(C) Tunisia	C* Turkey	Uganda	★ ★ United Arab Rep.	United Kingdom
United States	Upper Volta	Wruguay	Vatican City	venezuela	West Germany	*** * Western Samoa	* Yemen	Yugoslavia	Zambia
SELECTION OF WORLD FLAGS, 1968									

* Also known as Surinam



Jada has a small replica of a flag of Thailand.



It is 5 inches wide and $7\frac{1}{2}$ inches long.

1. What is the area of the flag? Explain or show your reasoning.

- 2. Each red stripe is $\frac{5}{6}$ inches wide. What is the area of each red stripe? Explain or show your reasoning.
- 3. The blue stripe is $\frac{10}{6}$ inches wide. What is the area of the blue stripe? Explain or show your reasoning.

8.2: More Flags

Han has a replica of the flag of Colombia.



It is $3\frac{1}{2}$ inches wide and $5\frac{1}{4}$ inches long. The yellow stripe is $\frac{1}{2}$ of the width of the flag and the blue and red stripes are each $\frac{1}{4}$ of the width.

1. $\frac{1}{4} \times 3\frac{1}{2} = \frac{7}{8}$. The answer is $\frac{7}{8}$ inch. What is the question?

2. $\frac{1}{2} \times 3\frac{1}{2} = \frac{7}{4}$ and $\frac{7}{4} \times \frac{21}{4} = \frac{147}{16}$. The answer is $\frac{147}{16}$ square inches. What is the question?



Section Summary

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In this unit, we learned to multiply fractions. First we learned to multiply unit fractions. For example, we learned that $\frac{2}{5} \times \frac{1}{3} = \frac{2}{15}$.



In diagram A, we can see that $\frac{2}{5}$ of $\frac{1}{3}$ of a square is the same size as $\frac{2}{15}$ of the whole square. Next, we learned how to multiply any fraction by a fraction.

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In diagram B, we can see that $\frac{4}{6} \times \frac{5}{7} = \frac{20}{42}$. We can multiply the numerators, 4×5 to find the numerator in the product. We can multiply the denominators, 6×7 , to find the denominator in the product. We can represent this relationship with the equation: $\frac{(4\times5)}{(6\times7)} = \frac{20}{42}$. Diagram B shows 4×5 or 20 pieces with 6×7 or 42 pieces in the whole square.