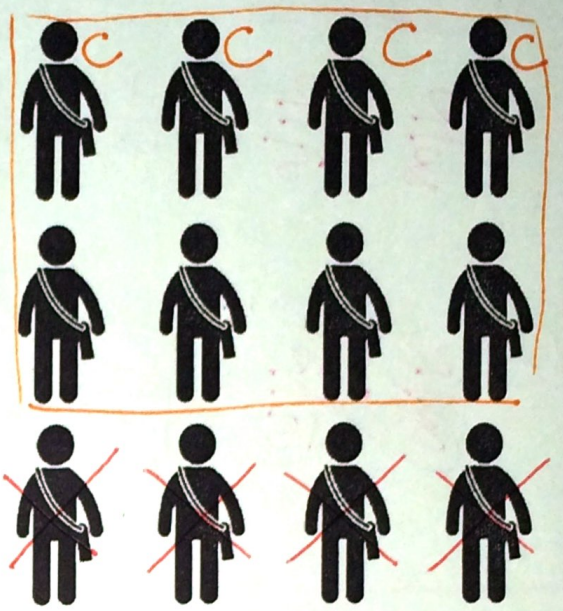
Name: Period:

Int 1 **Notes 2-6** **Unit 2**

Multiply/Divide Fractions

There are 12 students at the lunch table Two thirds of the students ordered a hamburger for lunch. One half of those students that ordered a hamburger put cheese on it.



Step1: Draw an X through the students that did NOT order a hamburger.

Step 2: Draw a C on the students that ordered cheese on their hamburger.

A. What fraction of the students at the lunch table ordered a cheeseburger? Write your fraction in simplest form.

$\frac{4 \div 4}{12 \div 4} = \boxed{\frac{1}{3}}$

B. What is $\frac{1}{2}$ of $\frac{2}{3}$? Write in simplest form.

$\boxed{\frac{1}{3}}$

C. We could have gotten the same answer by:

$\frac{1}{2} \cdot \frac{2}{3} = \frac{2 \div 2}{6 \div 2} = \boxed{\frac{1}{3}}$

Name: Period:

Int 1 **Notes 2-6** **Unit 2**

Multiply/Divide Fractions

Multiply Fractions:

Two Methods:

① $\frac{2}{3} \cdot \frac{12}{15} = \frac{24 \div 3}{45 \div 3} = \boxed{\frac{8}{15}}$

* Multiply straight across then simplify!

Same Answer ☺

② $\frac{2}{3} \cdot \frac{12}{15} = \boxed{\frac{8}{15}}$

* "simplify on the butterfly"
↳ cross simplify
then multiply straight across.

Ex. 1: $\frac{1}{2} \times \frac{1}{3} = \boxed{\frac{1}{6}}$

Ex. 2: $2 \times \left(-\frac{3}{4}\right) = \frac{2}{1} \times \left(-\frac{3}{4}\right) = \frac{-6 \div 2}{4 \div 2} = \boxed{-\frac{3}{2}}$

Ex. 3: $-\frac{2}{7} \cdot \frac{3}{8} = \boxed{-\frac{3}{28}}$

Ex. 4: $\frac{3}{5} \cdot \left(\frac{1}{2}\right) = \boxed{\frac{3}{10}}$

Ex. 5: $\frac{2}{3} \cdot (-4) = \frac{2}{3} \cdot \frac{(-4)}{1} = \boxed{\frac{-8}{3}}$ or $\boxed{-2\frac{2}{3}}$

Ex. 6: $-\frac{1}{3} \times \left(-\frac{3}{7}\right) = \boxed{\frac{1}{7}}$

Name:

Period:

Int 1

Notes 2-6
Multiply/Divide Fractions

Unit 2

Multiply MIXED Numbers:

*ALWAYS change Mixed → IMPROPER first!

Example: $3\frac{4}{5}$ $5 \cdot 3 + 4 = 19$ $\boxed{\frac{19}{5}}$

* Then! Use same method as Before!

* ALWAYS simplify your answer ☺

Ex. 7: $\frac{1}{2} \times 4\frac{2}{5}$ $4 \cdot 5 + 2$ $\frac{22}{5}$

$\frac{1}{2} \times \frac{22}{5} = \frac{22 \div 2}{10 \div 2} = \boxed{\frac{11}{5}}$ or $2\frac{1}{5}$

Ex. 8: $\frac{1}{4} \cdot 8\frac{4}{9}$ $9 \cdot 8 + 4 = 76$

$\frac{1}{4} \cdot \frac{76}{9}^{19} = \boxed{\frac{19}{9} \text{ or } 2\frac{1}{8}}$

Ex. 9: $5\frac{1}{3} \cdot 3$

$5 \cdot 3 + 1$

$\frac{16}{3} \cdot \frac{3}{1}^{1} = \frac{16}{1} = \boxed{16}$

Ex. 10: $-1\frac{7}{8} \cdot -2\frac{2}{5}$

$1 \cdot 8 + 7$ $5 \cdot 2 + 2$

$\frac{15}{8}^{3} \cdot \frac{12}{5}^{3} = \boxed{\frac{9}{2} \text{ or } 4\frac{1}{2}}$

Name: Period:

Int 1 **Notes 2-6** **Unit 2**

Multiply/Divide Fractions

Divide Fractions:

* ALWAYS change to Improper First!

- FLIP the Second Fraction.

- Multiply Like Before.

Ex. 11: $3 \div \frac{1}{4}$

$\frac{3}{1} \div \frac{1}{4} = \frac{3}{1} \cdot \frac{4}{1} = 12$

Ex. 12: $\frac{1}{3} \div 5$

$\frac{1}{3} \div \frac{5}{1} = \frac{1}{3} \cdot \frac{1}{5} = \frac{1}{15}$

Ex. 13: $\frac{3}{4} \div \left(-\frac{1}{2}\right)$

$\frac{3}{4} \cdot \frac{-2}{1} = -\frac{3}{2}$

Ex. 14: $\frac{3}{4} \div \frac{1}{4}$

$\frac{3}{4} \cdot \frac{4}{1} = \frac{3}{1} = 3$

Ex. 15: $-\frac{4}{5} \div \frac{8}{9}$

$-\frac{4}{5} \cdot \frac{9}{8} = -\frac{9}{10}$

Ex. 16: $49\frac{1}{2} \div 8\frac{1}{4}$

$\frac{99}{2} \div \frac{33}{4}$

$\frac{99}{2} \cdot \frac{4}{33} = \frac{6}{1} = 6$