

Math 20, Tuesday, 2/7

Talk about  
Math 58 vs. 60

Please turn in Assignment 2 (1 per team)

Return papers

Questions

Finish 3.2 and 3.3 - mult + Div with fractions  
+ word problems

Review Bingo game

Midterm 1 on Thursday, 9am

Chapters 1-3.3

NO calculator

Times table allowed (only on 1<sup>st</sup> midterm)

~ 20 problems

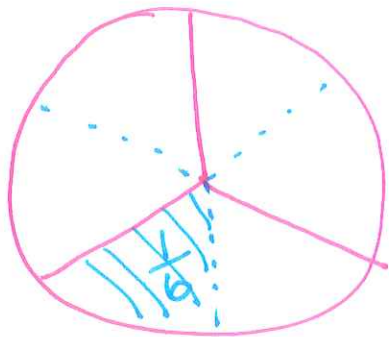
Scavenger hunt due on Thursday

Office hour change today:  
11:30 - noon only

# Section 3.2 - Multiplying Fractions Continued

What is half of a third?

multiply

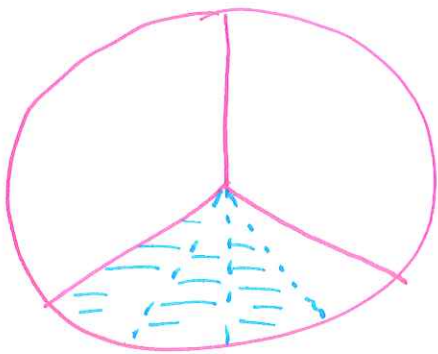


$$\frac{1}{2} \cdot \frac{1}{3} = \frac{1}{6}$$



multiply straight across

$\frac{3}{4}$  of  $\frac{1}{3}$ ?



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

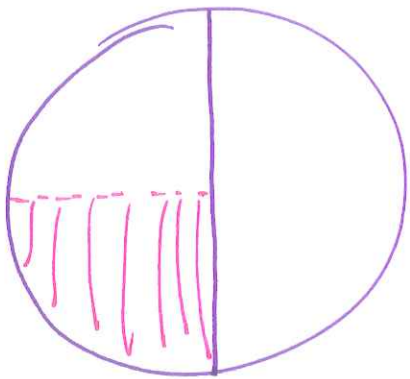
Cross-canceling

$$\frac{\overset{1}{\cancel{3} \div 3}}{4} \cdot \frac{1}{\underset{1}{\cancel{3} \div 3}} = \frac{1}{4}$$

$$\frac{\overset{1}{\cancel{5} \div 5}}{21 \div 3} \cdot \frac{1}{\underset{1}{\cancel{3} \div 3}} = \frac{1}{28}$$

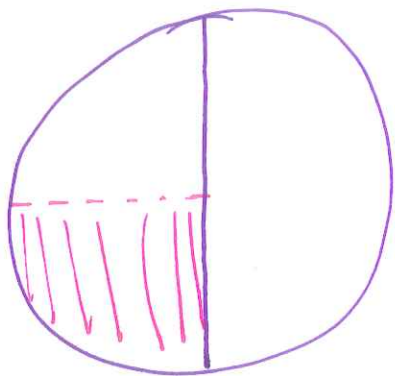
$$\frac{\frac{1}{5}}{\frac{9}{3}} \cdot \frac{\frac{2}{14}}{\frac{25}{5}} \cdot \frac{\frac{1}{3}}{\frac{49}{7}} = \frac{2}{105}$$

Section 3.3 Continued - Dividing Fractions



what is

$$\frac{1}{2} \div \frac{2}{1} = \frac{1}{4}$$



what is

$$\frac{1}{2} \text{ of } \frac{1}{2}$$

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

$$\frac{1}{2} \div \frac{2}{1} = \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{4}$$

↑ flip the second one

To divide by a fraction, multiply by its reciprocal

$$\frac{2}{3} \div \frac{1}{9}$$

$$\frac{2}{3} \cdot \frac{9}{1} = \frac{18}{3} = 6$$

"sit" "dot" "flip"

$$\frac{2}{3} \cdot \frac{9}{1} = \frac{6}{1} = 6$$

$$\frac{7}{11} \div \frac{21}{18}$$

$$= \frac{\overset{1}{\cancel{7}}}{11} \cdot \frac{\overset{6}{18}}{\underset{\substack{3 \\ 1}}{\cancel{21}}} = \frac{6}{11}$$

$$= \frac{6}{11}$$

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Pecans

$\frac{1}{4}$  cup per serving

8 servings

$$\frac{1}{\cancel{4}} \cdot \frac{\overset{2}{8}}{1} = 2 \text{ cups}$$

2 bags for 4 cups

# Bingo Review Problems

$$\textcircled{1} \quad -1 + 6 \\ = 5$$

$$\textcircled{2} \quad (-7)^2 \\ = 49 \quad (-7)(-7) = 49$$

$$\textcircled{3} \quad -3 + (-10) \\ = -13$$

$$\textcircled{4} \quad 1 - (-3) \\ = 1 + 3 \\ = 4$$

$$\textcircled{5} \quad -6 - (-1) \\ = -6 + 1 \\ = -5$$

$$\textcircled{6} \quad \text{Reduce } \frac{15 \div 5}{25 \div 5} \\ = \frac{3}{5}$$

$$\textcircled{7} \quad -7^2 = -7.7 \\ = -49$$

$$\begin{aligned} \textcircled{8} \quad & (-3)^2 + (-2)^2 \\ & = 9 + 4 \\ & = 13 \end{aligned}$$

$$\textcircled{9} \quad \text{Reduce } \frac{64}{104}$$

$$\frac{64 \div 2}{104 \div 2} = \frac{32 \div 2}{52 \div 2} = \frac{16 \div 2}{26 \div 2} = \frac{8}{13}$$

$$\begin{aligned} \textcircled{10} \quad & -4(-9) \\ & = 36 \end{aligned}$$

$$\begin{aligned} \textcircled{11} \quad & \frac{1}{\cancel{3}} \cdot \frac{\cancel{6}^2}{\cancel{10}_5} \\ & = \frac{1}{5} \end{aligned}$$

$$\begin{aligned} \textcircled{12} \quad & 3 - 7 \\ & = -4 \end{aligned}$$

$$\begin{aligned} \textcircled{13} \quad & \frac{\cancel{1}}{\cancel{10}_1} \cdot \frac{\cancel{20}^2}{\cancel{21}_3} \\ & = \frac{2}{3} \end{aligned}$$

$$\begin{aligned} \textcircled{14} \quad & (8-5)(11-5) \\ & = (3)(6) \\ & = 18 \end{aligned}$$

$$\textcircled{15} \quad | -14 |$$
$$= 14$$

$$\textcircled{16} \quad \frac{27}{32} \div \frac{9}{8}$$
$$\frac{\overset{3}{\cancel{27}}}{\cancel{32}} \cdot \frac{\overset{1}{\cancel{8}}}{\cancel{9}}$$
$$= \frac{3}{4}$$

$$\textcircled{17} \quad \frac{-18}{3(-2)} \qquad \underline{-18 \div 3(-2)}$$
$$= \frac{-18}{-6} \qquad = -6(-2)$$
$$= 3 \qquad = 12$$

$$\textcircled{18} \quad 77 - 2[-6 + (3-9)^2]$$
$$= 77 - 2[-6 + (-6)^2]$$
$$= 77 - 2[-6 + 36]$$
$$= 77 - 2[30]$$
$$= 77 - 60$$
$$= 17$$

P  
E  
MD  
AS



$$\textcircled{19} \quad \begin{array}{l} -|-14| \\ \downarrow \\ -14 \end{array}$$

$$\textcircled{20} \quad \frac{-24 + 3(-4)}{42 - (-6)^2}$$

$$= \frac{-24 + (-12)}{42 - 36}$$

$$= \frac{-36}{6}$$

$$= -6$$

$\textcircled{21}$  what is  $\frac{1}{5}$  of 50?

$$\frac{1}{5} \cdot \frac{50}{1} = 10$$