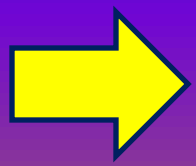
# As you scroll through the slides

- Have the Unit 5 Study Guide in front of you – printed or opened on your computer.
- Use the examples to help you on your test.
- Work out the problems on paper then put in your answer
- Use a calculator
- Mrs. Baker cannot help you answer the questions



# Which fractions are equivalent to $\frac{-4}{12}$ ?

a. $\frac{-1}{3}$ b. $\frac{-20}{30}$ c. $\frac{7}{-21}$ d. $\frac{-8}{-24}$

Write them in lowest terms. $\frac{-4}{12} = \frac{-1}{3}$

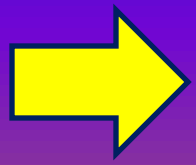
*a.* $\frac{-1}{3}$ (in lowest terms)

b. $\frac{-20}{30} = \frac{-2}{3}$

*c.* $\frac{7}{-21} = \frac{-1}{3}$

d. $\frac{-8}{-24} = \frac{1}{3}$

Remember: It does not matter if the negative sign is on the numerator, denominator, or in the middle.



Solve for ***n***.

$$\frac{7}{6}\mathrm{n} = -28$$

Use the inverse operations to get n by itself.

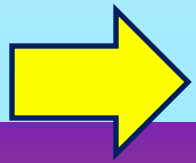
Divide -28 by $\frac{7}{6}$

Use the KCF rule for dividing by a fraction, and multiply -28 by $\frac{6}{7}$.

$n = -28 \div \frac{7}{6}$

$n = -28 \cdot \frac{6}{7}$

$n = -24$



What is $2\frac{2}{3} * (-5\frac{1}{2})$ ?

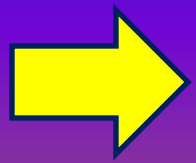
Change both mixed numbers into improper fractions.

$2\frac{2}{3} = \frac{8}{3}$ $\qquad$ $-5\frac{1}{2} = -\frac{11}{2}$

Multiply the improper fractions.

$$\frac{\text{Numerator x Numerator}}{\text{Denominator x Denominator}}$$

$$\frac{8}{3} \text{ x } (-\frac{11}{2}) = -\frac{88}{6} = -14\frac{2}{3}$$



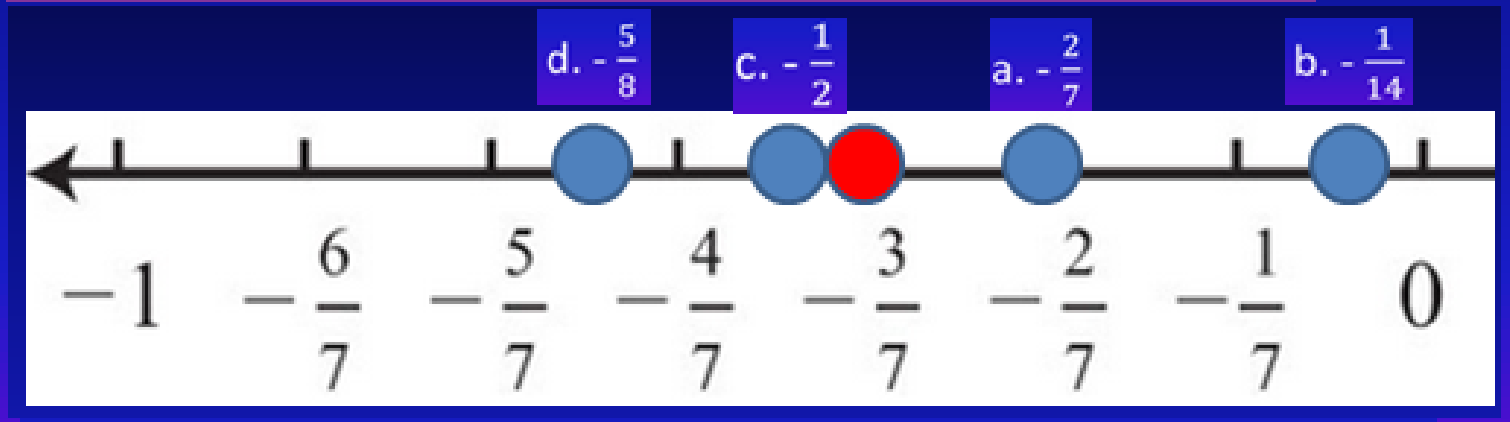
# Which two fractions are greater than $-\frac{3}{7}$?

a. $-\frac{2}{7}$ b. $-\frac{1}{14}$ c. $-\frac{1}{2}$ d. $-\frac{5}{8}$

Remember, in negative numbers the closer to zero a number is, the greater it is.

Hint: It helps to convert each to a decimal to compare.

a. -0.29 b. -0.07 c. -0.50 d. -0.625




a. $-\frac{2}{7}$ b. $-\frac{1}{14}$ c. $-\frac{1}{2}$ d. $-\frac{5}{8}$

Nemo swam $\frac{3}{8}$ of a mile last night. Today, he swam $\frac{1}{4}$ as far as he did last night. How far did he swim today?

To find a fraction of a fraction, simply multiply!

$$\frac{3}{8} \times \frac{1}{4} = \frac{3}{32}$$

$$\frac{\text{Numerator x Numerator}}{\text{Denominator x Denominator}}$$

A recipe calls for 3 cups of sugar. Wyldstyle wants to make 25% more servings than the recipe makes.

Which expression represents how many cups of sugar Wyldstyle should use?

a. $\frac{1}{4} * 3$ b. $\frac{3}{4} * 3$ c. $\frac{5}{4} * 3$ d. $\frac{7}{4} * 3$

We would need to include the original 3 cups and add an additional 25%.

- First, change 25% to a fraction. 25% = $\frac{1}{4}$
- Then, add the fraction to 1 whole. (We want $1\frac{1}{4}$ times the original amount.)
- Change the mixed number to an improper fraction.

$$1\frac{1}{4} = \frac{5}{4}$$

Multiply the improper fraction by the original amount.

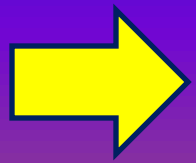
**Answer:**

c. $\frac{5}{4} * 3$

What is the fraction $\frac{8}{18}$ expressed in lowest terms?

Divide by the GCF.

$$\frac{8 \div 2}{18 \div 2} = \frac{4}{9}$$

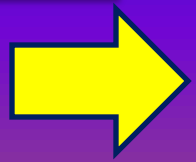


What is $-\frac{2}{3}+\frac{7}{12}$ ?

Write as fractions with the LCD

$$\frac{2}{3}=-\frac{8}{12}$$

$$-\frac{8}{12}+\frac{7}{12}=-\frac{1}{12}$$



Divide. Express your answer in lowest terms.

$$-2 \div \frac{5}{8}$$

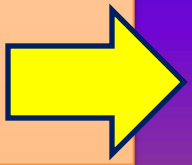
$-\frac{2}{1} \div \frac{5}{8}$ Put the whole number over 1.

$-\frac{2}{1} * \frac{8}{5}$ Use KCF

$-\frac{2}{1} * \frac{8}{5} = -\frac{16}{5}$ Multiply

Return to mixed number.

$-3\frac{1}{5}$



# Proportional Increase

Kiah earns $9.20/hour working at Trunchbowls. Her boss decides to give her a raise of 12% per hour. Which expression represents how much money Kiah will earn per hour after the raise.

A. $9.20 * \frac{3}{25}$

B. $9.20 * \frac{28}{25}$

C. $9.20 * \frac{22}{25}$

D. $9.20 * \frac{50}{25}$

$12\% = \frac{12}{100} = \frac{3}{25}$

But, we want to add that to the original amount.

So we actually want $1\frac{3}{25}$ times the original amount.

$1\frac{3}{25} = \frac{28}{25}$

So the answer is B.

# Proportional Increase

Don used to earn $20 per hour. Now he earns $\frac{1}{5}$ more money per hour. Which expressions represent how much money Noah earns per hour now?

Choose all answers that are correct.

A. $\frac{1}{5} * 20$

B. $20 + (\frac{1}{5} * 20)$

C. $1\frac{1}{5} * 20$

D. $\frac{6}{5} * 20$

Answers:
B, C, and D

We want to find $\frac{1}{5}$ of 20, and add it to 20.

Answer B shows just that.

Answer C is also correct. We are taking 20 times 1 plus the additional $\frac{1}{5}$.

Answer D is correct. It is the same as answer C, but the mixed number has been turned into an improper fraction.

# Estimating

Tim was $55\frac{1}{14}$ inches tall. Then he grew $2\frac{1}{7}$ inches. Which expression should Tim use to estimate how many inches tall he is now?

Since it asks us to estimate, we will round each value to the nearest inch.

$55\frac{1}{14}$ rounds to 55

$2\frac{1}{7}$ rounds to 2

Answer: D

A. $55\frac{1}{2} * 2$

B. $55\frac{1}{2} + 2\frac{1}{2}$

C. $55 * 2$

D. $55 + 2$

# Operations with Fractions (and negatives)

$$-\frac{2}{7} * \left(-\frac{3}{18}\right)$$

Multiply or Divide, it's an easy thought. Same signs are positive, different signs are not.

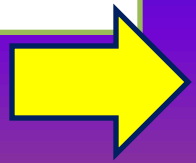
Multiply numerator x numerator.

Multiply denominator x denominator.

$$-\frac{2}{7} * \left(-\frac{3}{18}\right) = \frac{6}{126}$$

Simplify.

$$\frac{6}{126} = \frac{1}{21}$$



# Operations with Fractions (and negatives)

$$-\frac{3}{4}+\frac{7}{12}$$

$-\frac{9}{12}+\frac{7}{12}$ When adding or subtracting fractions, you need common denominators.

$-\frac{2}{12}$ Use the rules for adding integers, to add the numerators. Leave the denominators the same.

$-\frac{2}{12}=-\frac{1}{6}$ Simplify.

# Operations with Fractions (and negatives)

$$-\frac{2}{9} \div \left(-\frac{3}{4}\right)$$

$-\frac{2}{9} * \left(-\frac{4}{3}\right)$ KFC – Keep the first, flip the second, change division to multiplication,

Multiply numerator x numerator.

Multiply denominator x denominator.

$$-\frac{2}{9} * \left(-\frac{4}{3}\right) = \frac{8}{27}$$

# Operations with Fractions (and negatives)

$$-2\frac{1}{3} * \left(-3\frac{2}{5}\right)$$

$-\frac{7}{3} * \left(-\frac{17}{5}\right)$ Convert to improper fractions.

Multiply numerator x numerator.

Multiply denominator x denominator.

$$-\frac{7}{3} * \left(-\frac{17}{5}\right) = \frac{119}{15}$$

Turn BACK INTO mixed number. $7\frac{14}{15}$

# Operations with Fractions (and negatives)

$$-\frac{2}{15} - \left(-\frac{8}{15}\right)$$

$-\frac{2}{15} + \left(\frac{8}{15}\right)$ Use the rules for subtracting integers. KCC = Keep, Change, Change

Use the rules for adding integers, to add the numerators. Leave the denominators the same.

$\frac{6}{15} = \frac{2}{5}$ Simplify.

# Now what?

- Check your answers
- Submit your test
- Let Mrs. Baker know you are finished!