

10-16-18

Aim: SWBAT review.

HW: Test tomorrow

There is "Extra Practice" on the last two slides.

Do Now: Correct hw

HOMEWORK

Evaluate the following expressions if  $w = -\frac{1}{2}$ ,  $x = 2$ ,  $y = -3$  and  $z = \frac{2}{3}$

Remember to:

- 1) Rewrite (when necessary)
- 2) Substitute
- 3) Evaluate

1)  $w - y + x$

$$\begin{aligned} &= -\frac{1}{2} - (-3) + 2 \\ &= -\frac{1}{2} + 3 + 2 \\ &= 2\frac{1}{2} + 2 \\ &= 4\frac{1}{2} \end{aligned}$$

2)  $2x - 3z$

$$\begin{aligned} &= 2 \cdot 2 - 3 \cdot \frac{2}{3} \\ &= 4 - (3 \cdot \frac{2}{3}) \\ &= 4 - 2 \\ &= 2 \end{aligned}$$

3)  $\frac{4xy}{w}$

$$\begin{aligned} &\rightarrow \frac{4 \cdot 2 \cdot -3}{-\frac{1}{2}} \\ &\rightarrow \frac{-24}{-\frac{1}{2}} \\ &\rightarrow 48 \end{aligned}$$

Evaluate the following expressions if  $w = -\frac{1}{2}$ ,  $x = 2$ ,  $y = -3$  and  $z = \frac{2}{3}$

4)  $-15z - 4y$

$$\begin{aligned} &= -15 \cdot \frac{2}{3} - 4 \cdot -3 \\ &= -10 - 4 \cdot -3 \\ &= -10 + 12 \\ &= 2 \end{aligned}$$

5)  $wyz$

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

6)  $-y - xw$

$$\begin{aligned} &= -(-3) - 2 \cdot -\frac{1}{2} \\ &= 3 - 2 \cdot -\frac{1}{2} \\ &= 3 + 1 \\ &= 4 \end{aligned}$$

7)  $\frac{6w+x}{y-1}$

$$\begin{aligned} &\rightarrow \frac{6 \cdot -\frac{1}{2} + 2}{-3 - 1} \\ &\rightarrow \frac{-3 + 2}{-4} \\ &\rightarrow \frac{-1}{-4} \\ &\rightarrow \frac{1}{4} \end{aligned}$$

8)  $(x^2y) \div z$

$$\begin{aligned} &= (2^2 \cdot -3) \div \frac{2}{3} \\ &= (4 \cdot -3) \div \frac{2}{3} \\ &= -12 \div \frac{2}{3} \\ &= \frac{-12}{1} \cdot \frac{3}{2} \\ &= -18 \end{aligned}$$

UNIT 01B - FRACTIONS AND MIXED NUMBERS - REVIEW

A. State the Greatest Common Factor. Use it to write each fraction in simplest form.

GCF: 4 $\frac{12}{20} \div \frac{4}{4} = \frac{3}{5}$ 12: 1, 2, 3, 4, 6, 12	GCF: 7 $\frac{28}{49} \div \frac{7}{7} = \frac{4}{7}$ 28: 1, 2, 4, 7, 14, 28	GCF: 5 $\frac{60}{25} \div \frac{5}{5} = \frac{12}{5}$ 25: 1, 5, 25	GCF: 3 $\frac{18}{15} \div \frac{3}{3} = \frac{6}{5}$ 15: 1, 3, 5, 15
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B. State the Least Common Denominator (LCD) for each pair.

$\frac{1}{4}$ and $\frac{-2}{3}$ 12 4, 8, 12	$\frac{11}{5}$ and $-1\frac{1}{6}$ 30 6, 12, 18, 24, 30	$\frac{5}{16}$ and $\frac{3}{20}$ 80 20, 40, 60, 80	$\frac{13}{12}$ and $2\frac{11}{36}$ 36, 36
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Convert

C. Change each fraction to a mixed number.

$\frac{10}{3}$ $3\overline{)10}$ $\frac{3}{3}$ $3\frac{1}{3}$	$\frac{-25}{6} \rightarrow -4\frac{1}{6}$ $6\overline{)25}$ $\frac{3}{4}$ $3\frac{3}{4}$	$\frac{32}{-7} \rightarrow -4\frac{4}{7}$ $7\overline{)32}$ $\frac{4}{4}$
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D. Change each mixed number into an improper fraction.

$2\frac{1}{6}$ $\frac{(6 \cdot 2) + 1}{6}$ $\frac{13}{6}$	$-5\frac{2}{3}$ $\frac{(3 \cdot 5) + 2}{3}$ $-\frac{17}{3}$	$-4\frac{3}{4}$ $\frac{(4 \cdot 4) + 3}{4}$ $-\frac{19}{4}$	$3\frac{7}{10}$ $\frac{(10 \cdot 3) + 7}{10}$ $\frac{37}{10}$
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E. Write the additive inverse for each. *opposite : change the sign*

$3\frac{7}{8}$	$-9\frac{1}{3}$	$-\frac{1}{4}$	$-14$
$-3\frac{7}{8}$	$9\frac{1}{3}$	$\frac{1}{4}$	$14$

F. Write the multiplicative inverse for each. *reciprocal : flip, but keep sign*

$* 3\frac{7}{8}$	$* -9\frac{1}{3}$	$-\frac{1}{4}$	$\frac{-14}{1}$
$\frac{31}{8} \rightarrow \frac{8}{31}$	$\frac{-28}{3} \rightarrow \frac{-3}{28}$	$-\frac{4}{1} \rightarrow -4$	$\frac{-1}{14}$

G. Evaluate if  $a = \frac{1}{2}$

$a^2$ $(\frac{1}{2})^2$ $\frac{1}{4}$	$\frac{1}{2} \cdot \frac{1}{2}$	$-a^2$ $-(\frac{1}{2})^2$ $-\frac{1}{4}$
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H. Zero or Undefined?

$\frac{1}{0}$ undefined	$\frac{0}{12}$ 0	$\frac{0}{-25}$ 0	$\frac{4}{0}$ undefined
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ADDING and SUBTRACTING WITH SIGNS

SAME SIGNS - ADD & KEEP

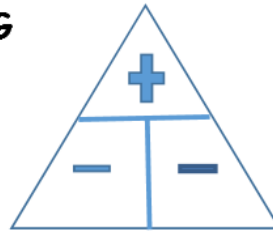
DIFFERENT SIGNS - SUBTRACT & THINK

I. Write the answer, in simplest form, on the line provided. Show work.

$\boxed{4\frac{2}{5}} - 2\frac{1}{4} = 2\frac{3}{20} \text{ or } \frac{43}{20}$ $6 + 2\frac{5}{7} = 8\frac{5}{7}$ $4\frac{2 \cdot 4}{5 \cdot 4} = 4\frac{8}{20}$ $- 2\frac{1 \cdot 5}{4 \cdot 5} = 2\frac{5}{20}$ <hr style="width: 50%; margin-left: 0;"/> $2\frac{3}{20}$	$3\frac{1}{5} + (-3\frac{1}{2}) = -\frac{3}{10}$ $\boxed{3\frac{1}{5}} - 3\frac{1}{2}$ $3\frac{1 \cdot 2}{5 \cdot 2} = 3\frac{2}{10}$ $- 3\frac{1 \cdot 2}{2 \cdot 2} = 3\frac{2}{10}$ <hr style="width: 50%; margin-left: 0;"/> $\frac{3}{10}$
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$\boxed{3\frac{1}{7}} - 10 = -6\frac{6}{7}$ $10 = 9\frac{7}{7}$ $- 3\frac{1}{7} = 3\frac{1}{7}$ <hr style="width: 50%; margin-left: 0;"/> $6\frac{6}{7}$	$-5\frac{1}{3} + (-6\frac{2}{3}) = -12$ $\boxed{-5\frac{1}{3}} - 6\frac{2}{3}$ $5\frac{1}{3}$ $+ 6\frac{2}{3}$ <hr style="width: 50%; margin-left: 0;"/> $11\frac{3}{3}$ $12$
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MULTIPLYING AND DIVIDING  
WITH SIGNS



J. Write the answer, in simplest form, on the line provided. Show work.

$\left(2\frac{2}{5}\right)\left(2\frac{1}{4}\right) = \underline{\hspace{2cm}}$ $\begin{array}{r} \cancel{3} \frac{12}{5} \cdot \frac{9}{\cancel{4} 1} \\ \hline \frac{27}{5} \end{array}$	$-7 \div -2\frac{1}{3} = \underline{3}$ $\frac{-7}{1} \div \frac{-7}{3}$ $\cancel{1} \frac{-7}{1} \cdot \frac{3}{\cancel{7} 1}$	$\left(\frac{1}{5}\right)\left(-3\frac{1}{2}\right) = \underline{-\frac{7}{10}}$ $\frac{1}{5} \cdot \frac{-7}{2}$ $\frac{-7}{10}$
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$-1\frac{1}{7} \div \frac{16}{49} = \underline{-\frac{7}{2}}$ $\frac{-8}{7} \cdot \frac{49}{16}$ $\frac{-2}{1} \cdot \frac{7}{2}$	$\left(-\frac{1}{3}\right)(-6) = \underline{2}$ $\frac{-1}{3} \cdot \frac{-6}{1}$ $2$
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Practice Problems. Answers are highlighted.

Find each difference.

1.  $5 - 23$

2.  $-6 - 4 - 10$

3.  $-3 - (-1) - 2$

4.  $\frac{2}{3} - \frac{1}{2} - \frac{1}{6}$

5.  $2\frac{1}{3} - 3 - \frac{2}{3}$

6.  $\frac{5}{6} - \frac{2}{3} - \frac{1}{6}$

7.  $4\frac{1}{2} - 5\frac{2}{3} - 1\frac{1}{6}$

8.  $-\frac{6}{7} - \frac{5}{3} - 2\frac{11}{21}$

Solve each equation. Write the solution in simplest form.

9.  $y = 15 - 96$

10.  $8 - 2\frac{1}{4} = h - 5\frac{3}{4}$

11.  $\frac{5}{7} - \frac{2}{7} = g - \frac{3}{7}$

12.  $x = 3 - \frac{1}{2} - 2\frac{1}{2}$

13.  $-5 - 3\frac{1}{2} = j - 8\frac{1}{2}$

14.  $-2 - (-4) = m - 2$

15.  $a = -7 - (-2\frac{3}{4}) - 4\frac{1}{4}$

16.  $p = -\frac{3}{4} - (-\frac{1}{4}) - \frac{1}{2}$

17.  $3\frac{5}{7} - (-1\frac{1}{7}) = x - 4\frac{6}{7}$

18.  $b = 3\frac{1}{3} - 2\frac{1}{6} - \frac{1}{6}$

19.  $s = 6\frac{3}{4} - 3\frac{1}{2} - 3\frac{1}{4}$

20.  $4\frac{1}{3} - 2\frac{1}{2} = t - 1\frac{5}{6}$

21.  $c = -\frac{9}{8} - (-\frac{3}{8}) - 1\frac{1}{8}$

22.  $r = -\frac{3}{11} - \frac{7}{11} - \frac{10}{11}$

23.  $8\frac{1}{5} - 2\frac{1}{4} = u - 5\frac{9}{20}$

24.  $t = 5\frac{3}{4} - 2\frac{5}{8} - 2\frac{1}{2} - \frac{5}{12}$

25.  $-\frac{11}{12} - (-1\frac{1}{2}) + 6\frac{3}{4} = a - 7\frac{1}{3}$

26.  $2\frac{5}{9} - 6\frac{2}{3} - (-3\frac{1}{6}) = z - \frac{17}{18}$

27.  $m = -4\frac{3}{8} - (-2\frac{1}{3}) + (-9\frac{7}{9}) - 1\frac{56}{72}$

The answers are listed. Concentrate on how to get the answers.

Written Exercises

Solve each equation. Write the solution in simplest form.

1.  $a = 2(-\frac{1}{4}) - \frac{1}{2}$

2.  $n = \frac{1}{2}(-4) - 2$

4.  $c = 14(\frac{3}{7}) - 4$

5.  $r = -2\frac{1}{2}(-6) - 15$

7.  $d = -4(\frac{3}{8}) - 1\frac{1}{2}$

8.  $(-7)(-2\frac{1}{3}) = h - 10\frac{1}{3}$

10.  $m = (-1\frac{1}{3})(-\frac{3}{4}) - 1$

11.  $(2\frac{1}{4})(-\frac{4}{3}) = t - 3$

13.  $(-9\frac{3}{5})(\frac{5}{12}) = y - 4$

14.  $f = (-16)(-\frac{3}{8}) - 6$

16.  $(-7)(-8\frac{1}{2}) = x - 59\frac{1}{2}$

17.  $(3\frac{1}{8})(-2\frac{1}{3}) = m - 7\frac{7}{18}$

19.  $(4\frac{1}{2})(2\frac{2}{7}) = p - 10\frac{2}{7}$

20.  $(-8\frac{1}{5})(-5\frac{1}{2}) = n - 45\frac{1}{10}$

Challenge Exercises

22.  $-\frac{3}{4} \cdot \frac{4}{7} \cdot (-\frac{1}{8}) = y - \frac{1}{21}$

23.  $n = (-\frac{5}{9})(-\frac{3}{8})(-\frac{6}{7}) - \frac{3}{7}$

Practice Problems. Answers are highlighted.

Solve each equation. Write the solution in simplest form.

1.  $y = 5 \div 7 \frac{9}{7}$

2.  $x = 16 \div (-5) - 3 \frac{1}{5}$

3.  $-3 \div (-10) = s \frac{3}{10}$

4.  $a = 6 \div (-\frac{2}{3}) - 9$

5.  $c = -10 \div (\frac{5}{2}) - 4$

6.  $\frac{3}{4} + \frac{2}{3} = t \frac{17}{12}$

7.  $h = 2 \frac{1}{2} + \frac{3}{4} - 3 \frac{1}{3}$

8.  $p = -3 \frac{1}{5} + 4 \frac{2}{5} - \frac{8}{11}$

9.  $16 \frac{1}{8} + 14 \frac{1}{3} = u \frac{11}{8}$

10.  $x = 10 \div (-2) - 5$

11.  $-3 \div (\frac{2}{3}) = y - 4 \frac{1}{2}$

12.  $\frac{3}{4} + \frac{1}{2} = k \frac{5}{4}$

13.  $p = -\frac{5}{7} + \frac{1}{14} - 10$

14.  $2 \frac{3}{4} \div (-\frac{3}{4}) = a - 3 \frac{2}{3}$

15.  $-8 + (-\frac{4}{3}) = h \ 6$

16.  $f = -\frac{3}{8} + (-3) \frac{1}{8}$

17.  $c = 5 \frac{5}{8} + 2 \frac{1}{3} - 2 \frac{1}{2}$

18.  $4 \frac{2}{3} \div (-\frac{6}{7}) = d - 5 \frac{2}{9}$

19.  $q = -2 \div (-\frac{1}{3}) \ 6$

20.  $s = -3 \frac{5}{8} + 2 \frac{1}{6} - 1 \frac{15}{32}$

21.  $-7 \frac{1}{2} \div (1 \frac{1}{5}) = n - 6 \frac{1}{4}$

22.  $m = -\frac{16}{7} \div (-\frac{12}{35}) \ 6 \frac{2}{3}$

23.  $a = \frac{21}{30} \div (-\frac{7}{15}) - 1 \frac{1}{2}$

24.  $12 \frac{1}{4} \div (-\frac{14}{3}) = j - 2 \frac{5}{8}$

Challenge Exercises

25.  $\frac{-8}{9} \div (\frac{7}{18} + \frac{7}{8}) = w \ -2$

26.  $(-5 \frac{1}{4} + -4 \frac{1}{2}) \cdot \frac{-6}{7} = r \ -1$

27.  $q = (-1 \frac{5}{6} \cdot 10 \frac{2}{3}) \div -1 \frac{3}{7} \frac{13 \frac{31}{45}}$