

Before we begin, are there any questions from last day's work?

Work on p. 530 #1, 3, 4, 5 (Sheet on last screen)

Note for 3e) **the correct answer is 105;**
the textbook is incorrect! (the answer is NOT 15/7)

Note for 4b) **the correct answer is 20;**
the textbook is incorrect! (the answer is NOT 3)

p. 530

3. Evaluate.

f) $56 \div [(8)(7)] \div 49$

$$= 56 \div 56 \div 49$$

$$= 1 \div 49$$

$$= \frac{1}{49}$$

4. Evaluate.

b) $(-5)^2 \div (-7) + (-12)$

$$= 25 + 7 - 12$$

$$= 32 - 12$$

$$= 20$$

Set of rational numbers $Q = \left\{ \frac{a}{b} \mid a, b \in I, b \neq 0 \right\}$

Ex. 1) Simplify the following (**always** reduce to lowest terms)

$$\begin{aligned} \text{a) } & \frac{3}{4} \times \frac{5}{7} \\ & = \frac{15}{28} \end{aligned}$$

$$\begin{aligned} \text{b) } & \frac{1}{2} \times \frac{10}{9} \\ & = \frac{10}{18} \\ & = \frac{5}{9} \end{aligned}$$

$\left. \begin{array}{l} \frac{1 \times 5}{1 \times 9} \\ = \frac{5}{9} \end{array} \right\}$

$$\begin{aligned} \text{c) } & \frac{2}{3} \div \frac{6}{7} \\ & = \frac{2}{3} \times \frac{7}{6} \\ & = \frac{7}{9} \end{aligned}$$

$$\begin{aligned} \text{d) } & \frac{8}{9} \div \frac{2}{5} \\ & = \frac{8}{9} \times \frac{5}{2} \\ & = \frac{20}{9} \text{ or } 2\frac{2}{9} \end{aligned}$$

$$\begin{aligned} \text{e) } & \frac{3}{4} + \frac{2}{5} \\ & = \frac{15}{20} + \frac{8}{20} \\ & = \frac{23}{20} \end{aligned}$$

$$\begin{aligned} \text{f) } & \frac{3}{5} - \frac{2}{15} \\ & = \frac{9}{15} - \frac{2}{15} \\ & = \frac{7}{15} \end{aligned}$$

$$\begin{aligned} \text{g) } & \frac{-4}{3} - \frac{2}{3} \\ & = \frac{-4-2}{3} \\ & = \frac{-6}{3} \\ & = -2 \end{aligned}$$

$$\begin{aligned} \text{h) } & \frac{7}{8} - \frac{3}{2} \\ & = \frac{7}{8} - \frac{12}{8} \\ & = \frac{7-12}{8} \\ & = \frac{-5}{8} \end{aligned}$$

Ex. 2) Simplify the following (**always** reduce to lowest terms)

$$a) \frac{-2}{3} + \frac{3}{-2} - \frac{3}{10}$$

$$\begin{aligned}
 &= -\frac{2}{3} - \frac{3}{2} - \frac{3}{10} \\
 &\stackrel{\times 10}{=} \frac{-20}{30} - \frac{45}{30} - \frac{9}{30} \\
 &= \frac{-74}{30} \\
 &= \frac{-37}{15}
 \end{aligned}$$

$$b) \frac{3}{4} \times \frac{-4}{5} \div \frac{-3}{7}$$

$$\begin{aligned}
 &= \frac{3}{4} \times \frac{-4}{5} \times \frac{7}{3} \\
 &= \frac{1 \times 1 \times 7}{1 \times 5 \times 1} \\
 &= \frac{7}{5}
 \end{aligned}$$

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

$$\begin{aligned}
 &= -\frac{7}{3} \div -\frac{17}{5} \\
 &= -\frac{7}{3} \times \frac{5}{17} \\
 &= +\frac{35}{51}
 \end{aligned}$$

Homework Practice: p. 532 #1 - 4

Reminder:

$$\begin{aligned}
 \frac{10}{-2} &= -5 & \frac{-10}{2} &= -5 & -\frac{10}{2} &= -5
 \end{aligned}$$

Practising

1. Evaluate.

- a) $6 + (-3)$
- b) $12 - (-13)$
- c) $-17 - 7$
- d) $(-23) + 9 - (-4)$
- e) $24 - 36 - (-6)$
- f) $32 + (-10) + (-12) - 18 - (-14)$

2. Which choice would make each statement true:
>, <, or =?

- a) $-5 - 4 - 3 + 3 \blacksquare -4 - 3 - 1 - (-2)$
- b) $4 - 6 + 6 - 8 \blacksquare -3 - 5 - (-7) - 4$
- c) $8 - 6 - (-4) - 5 \blacksquare 5 - 13 - 7 - (-8)$
- d) $5 - 13 + 7 - 2 \blacksquare 4 - 5 - (-3) - 5$

3. Evaluate.

- a) $(-11) \times (-5)$
- b) $(-3)(5)(-4)$
- c) $35 \div (-5)$
- d) $(-72) \div (-9)$
- e) $(5)(-9) \div (-3)(7)$
- f) $56 \div [(8)(7)] \div 49$

4. Evaluate.

- a) $(-3)^2 - (-2)^2$
- b) $(-5)^2 - (-7) + (-12)$
- c) $-4 + 20 \div (-4)$
- d) $-3(-4) + 8^2$
- e) $(-16) - [(-8) \div 2]$
- f) $8 \div (-4) + 4 \div (-2)^2$

5. Evaluate.

- a) $\frac{-12 - 3}{-3 - 2}$
- b) $\frac{-18 + 6}{(-3)(-4)}$
- c) $\frac{(-16 + 4) \div 2}{8 \div (-8) + 4}$
- d) $\frac{-5 + (-3)(-6)}{(-2)^2 + (-3)^2}$