P. 129 Multiplying Rationals Continued Sept. 18

24. $\left(-\frac{2}{5}\right)^2$

$= \left(-\frac{2}{5}\right)\left(-\frac{2}{5}\right)$

$= \frac{4}{25}$

25. $-\left(\frac{1}{2}\right)^4$

$= -\left(\frac{1}{2}\right)\left(\frac{1}{2}\right)\left(\frac{1}{2}\right)\left(\frac{1}{2}\right)$

$= -\frac{1}{16}$

p.132 Dividing Rational Numbers

1. $-\frac{1}{3} \div \frac{1}{2}$ $\quad (-) \div (+) = (-)$

2. $6 \div \frac{1}{3}$ $\quad (+) \div (+) = (+)$

3. $\frac{7}{9} \div -\frac{1}{3}$ $\quad (+) \div (-) = (-)$

4. $-4\frac{1}{2} \div (-1\frac{1}{2})$ $\quad (-) \div (-) = (+)$

State the reciprocal

9. $\frac{1}{4}$ flip $\rightarrow$ $\frac{4}{1}$

10 $-\frac{1}{2}$ $-\frac{2}{1}$

13. $\frac{3}{1}$ $\frac{1}{3}$

14. $1\frac{3}{4} = \frac{7}{4} \rightarrow \frac{4}{7}$

15. $\frac{0}{1}$ ~~$\frac{1}{0}$~~ no reciprocal for 0

16. $-2\frac{1}{5} = -\frac{11}{5} \rightarrow -\frac{5}{11}$

17. $3\frac{1}{2} \div 2\frac{1}{4}$

$= \frac{7}{2} \div \frac{9}{4}$

$= \frac{7}{2} \times \frac{4}{9}$

$= \frac{28}{18} = \frac{14}{9}$

$=$

to divide fractions, multiply by the reciprocal of the second fraction.

18. $-4\frac{1}{4} \div 1\frac{7}{8}$

$= -\frac{17}{4} \div \frac{15}{8}$

$= -\frac{17}{4} \times \frac{8}{15}$

$= -\frac{136}{60} \overset{\div 4}{=} -\frac{34}{15}$

25. $\frac{2}{1} \div \frac{2}{7}$

$= \frac{2}{1} \times \frac{7}{2}$

$= \frac{14}{2}$

$= 7$

26. $-\frac{7}{8} \div \left(-\frac{1}{4}\right)$

$= -\frac{7}{8} \times -\frac{4}{1}$

$= \frac{28}{8}$

$= \frac{7}{2}$

p.137 Adding + Subtracting Rationals

1. Lowest Common Denominator LCD

$\frac{1}{2} \times 5 \quad \frac{1}{5} \times 2$

$\frac{5}{10}, \frac{2}{10}$

2. $-\frac{3}{8}, -\frac{1}{4} \times 2$

$-\frac{2}{8}$

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

$\frac{5}{3} \times 4 \quad -\frac{11}{4} \times 3$

$\frac{1}{3} \times 4 \quad \frac{1}{4} \times 3$

$\rightarrow \frac{20}{12}, -\frac{33}{12}$

4. $1\frac{1}{3} + 2\frac{3}{4}$

$= \frac{4}{3} \overset{\times 4}{} + \frac{11}{4} \overset{\times 3}{}$

$= \frac{16}{12} + \frac{33}{12}$

$= \frac{49}{12}$

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

$= -\frac{3}{2} \overset{\times 4}{} + \frac{25}{8}$

$= \frac{-12}{8} + \frac{25}{8}$

$= \frac{13}{8}$

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

$= -\frac{5}{6} - \frac{9}{4}$ $\times 2$ $\times 3$

$= -\frac{10}{12} - \frac{27}{12}$

$= -\frac{37}{12}$

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

$= \frac{1}{4} - \frac{7}{3}$ $\times 3$ $\times 4$ ✓

$= \frac{3}{12} - \frac{28}{12}$ ✓

$= -\frac{25}{12}$ ✓

26.

$$-1\frac{4}{5} - \frac{1}{10}$$

$$= \frac{-9}{5} - \frac{1}{10}$$

$$= \frac{-18}{10} - \frac{1}{10}$$

$$= \frac{-19}{10}$$

☆

32.

$$\frac{1 \times 100}{1 \times 100} \quad \frac{1}{100} \times 1$$

$$= \frac{100}{100} - \frac{1}{100}$$

$$= \frac{99}{100}$$

37. $3\frac{1}{2} - 5\frac{1}{3}$

$= \frac{7 \times 3}{2} - \frac{16 \times 6}{3}$

$= \frac{21 - 96}{6}$

$= \frac{-75}{6}$

$= \frac{-25}{2}$

Homework

p. 129

p. 132

PP 137-138

$\frac{29}{10} = 1.52631578\overline{9}$

after 14 digits, it repeats!

all fractions are rational numbers!