Curriculum Outcome

N1: Demonstrate an understanding of rational numbers by: comparing and ordering rational numbers; solving problems that involve arithmetic operations on rational numbers.

Student Friendly:
“BEDMAS with fractions and decimals"

Do we need a warm-up?

$8.8 - 3.4 + (5.96 - 5)^2$

6.3216

$\left(2\frac{2}{5} + 3\frac{1}{2} \times 3\frac{2}{3}\right) \div 2\frac{1}{2}$

$6\frac{7}{75}$ or $\frac{457}{75}$

$15 \div 3 = 5$

$0 = 15 \div 5$

1) $3.5 \times \square = 67.2$

2) $\frac{1}{2} \div \square = \frac{2}{3}$

$\square = \frac{1}{2} \div \frac{2}{3}$

3) $\square \div \frac{2}{5} = \frac{1}{10}$

$$8.8 - 3.4 + (5.96 - 5)^2$$

$8.8 - 3.4 + (0.96)^2$

$8.8 - 3.4 + (0.9216)$

$= 6.3216$

$$\left(2\frac{2}{5}+3\frac{1}{2}\times 3\frac{2}{3}\right)\div 2\frac{1}{2}$$

$$\left(\frac{12}{5}+\frac{7}{2}\times\frac{11}{3}\right)\div\frac{5}{2}$$

$$\left(\frac{12}{5}+\frac{77}{6}\right)\div\frac{5}{2}$$

$$\left(\frac{72}{30}+\frac{385}{30}\right)$$

$$\left(\frac{457}{30}\right)\div\frac{5}{2}$$

$$\frac{457}{30}\times\frac{\cancel{2}^{1}}{5}$$

$$15$$

$$=\frac{457}{75}$$

Warm Up

$4 \times \square = 12$

$\square = 12 \div 4$

$15 \div 3 = 5$

$\square = 15 \div 5$

1) $3.5 \times \square = 67.2$

$\square = 67.2 \div 3.5$

$\square = 19.2$

2) $\frac{1}{2} \div \square = \frac{2}{3}$

$\square = \frac{1}{2} \div \frac{2}{3}$

$\frac{1}{2} \times \frac{3}{2}$

$\square = \frac{3}{4}$

3) $\square \div \frac{2}{5} = \frac{1}{10}$

$\square = \frac{2}{5} \times \frac{1}{10}$

$\square = \frac{2}{50}$

$15 \div 5 = 3$

$\square = 5 \times 3$

$$\frac{(3.2 + 4.5)^2 - (-2.8 - 5.3)}{[(1.5) \times (3.2)] + [(4.6) \div (-2.3)]}$$

$$\frac{(3.2 + 4.5)^2 - (-2.8 - 5.3)}{[(1.5) \times (3.2)] + [(4.6) \div (2.3)]}$$

Top

$(3.2 + 4.5)^2 - (-2.8 - 5.3)$

$(7.7)^2 - (-8.1)$

$59.29 + 8.1$

67.39

Bottom

$[(1.5) \times (3.2)] + [(4.6) \div (2.3)]$

$4.8 + 2$

6.8

Top ÷ Bottom

$67.39 \div 6.8$

$\doteq 9.913$

Hints for TEST:

To list or compare decimals, remember to add a zero to the end of your decimal.

Example 3.210 3.220

To list or compare fractions, remember use common denominators.

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

$\times 5$ $\times 3$

$-\frac{5}{15} > -\frac{9}{15}$

-5 is bigger than -9

Mixed to Improper

$-3\frac{1}{6} = \frac{-(3 \times 6)+1}{6} = \frac{-19}{6}$

Improper to Mixed

$\frac{36}{5} = (36 \div 5) = 7.? = 7\frac{1}{5}$

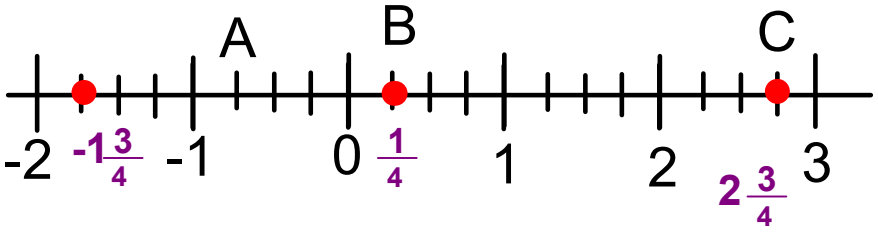
$(7 \times 5) = 35 + (1) = 36$

Number line

- Determine the last integer you passed to get to the whole number in front of the fraction

-Count the number of bumps in between integers to get the denominator of the fraction

-To get the numerator count how far away you are from the last integer you passed.



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Hints for TEST:

Subtracting a Negative

-add the opposite

$-8 - (-5)$

$= -8 + 5$

$= -3$

To add and subtract fractions you need common denominators

1) $\frac{-1}{4} + \frac{5}{7}$

$= \frac{-7}{28} + \frac{20}{28}$

$= \frac{13}{28}$

ALWAYS REDUCE WHEN POSSIBLE

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

$= \frac{-7}{3} - \frac{17}{5}$

$= \frac{-35}{15} - \frac{51}{15}$

$= \frac{-86}{15}$

$= -5\frac{11}{15}$

Hints for TEST:

To Multiply fractions: $\frac{\text{top x top}}{\text{bottom x bottom}}$

DO NOT use COMMON DENOMINATORS

1) $\frac{-1}{3} \times \frac{6}{5}$

$= \frac{(-1 \times 6)}{(3 \times 5)}$ Simplify

$= \frac{(-1 \times 2)}{(1 \times 5)}$

$= \frac{-2}{5}$

ALWAYS REDUCE WHEN POSSIBLE

2) $2\frac{1}{3} \times -2\frac{2}{5}$

$= \frac{7}{3} \times \frac{-12}{5}$ Simplify

$= \frac{(7 \times -4)}{(1 \times 5)}$

$= \frac{-28}{5}$

Question was in mixed so answer should be in mixed

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

Solve for unknowns: (Hint: $3 \times \boxed{4} = 12$)

$\square = 12 \div 3$

Example

$\square \times \frac{1}{2} = \frac{4}{3}$

$\square = \frac{4}{3} \div \frac{1}{2}$

$\square = \frac{4}{3} \times \frac{2}{1}$

$\square = \frac{8}{3}$

To DIVIDING fractions: FLIP AND MULTIPLY

DO NOT use COMMON DENOMINATORS

1) $\frac{-2}{7} \div \frac{3}{10}$ FLIP

$= \frac{-2}{7} \times \frac{10}{3}$

$= \frac{(-2 \times 10)}{(7 \times 3)}$ Simplify if possible

$= \frac{-20}{21}$

ALWAYS REDUCE WHEN POSSIBLE

2) $5\frac{1}{4} \div -1\frac{2}{3}$ FLIP

$= \frac{21}{4} \div \frac{-5}{3}$

$= \frac{21}{4} \times \frac{-3}{5}$ Simplify if possible

$= \frac{(21 \times -3)}{(4 \times 5)}$

$= \frac{-63}{20}$

Question was in mixed so answer should be in mixed

$= -3\frac{3}{20}$

Solve for unknowns:

(Hint: $\boxed{15} \div 3 = 5$)

$\square = 3 \times 5$

Example

$\square \div \frac{2}{3} = \frac{1}{5}$

$\square = \frac{2}{3} \times \frac{1}{5}$

$\square = \frac{2}{15}$

(Hint: $15 \div \boxed{3} = 5$)

$\square = 15 \div 5$

Example

$\frac{2}{15} \div \square = \frac{1}{5}$

$\square = \frac{2}{15} \div \frac{1}{5}$

$\square = \frac{2}{15} \times \frac{5}{1}$

$\square = \frac{2}{3} \times \frac{1}{1}$

$\square = \frac{2}{3}$

Hints for TEST:

as they appear

B	E	D	M	A	S
r	x	i	u	d	u
a	p	v	l	d	b
c	o	s	t		t
k	n	i	i		r
e	e	d	p		a
t	n	e	l		c
	t		y		t

Example

$$\left(\frac{2}{5}\right)^2 \div \left(\frac{2}{3} + \frac{4}{5}\right)$$

$$= \left(\frac{2}{5}\right)^2 \div \left(\frac{10}{15} + \frac{12}{15}\right)$$

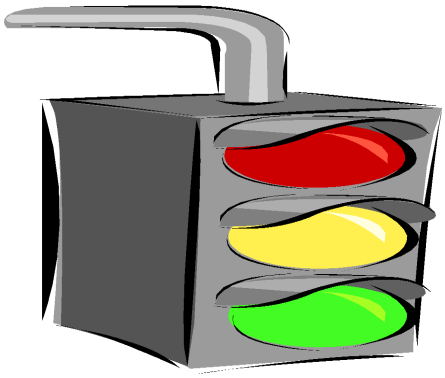
$$= \left(\frac{2}{5}\right)^2 \div \left(\frac{22}{15}\right)$$

$$= \left(\frac{4}{25}\right) \div \left(\frac{22}{15}\right)$$

$$= \left(\frac{4}{25}\right) \times \left(\frac{15}{22}\right)$$ Simplify

$$= \left(\frac{2}{5}\right) \times \left(\frac{3}{11}\right)$$

$$= \left(\frac{6}{55}\right)$$



Page 144 & 145

2
3(c,d)
4
5 (a,c)
6(a)
7(a,b,c)
8(a,d)
10(b,c)
14
16ac
19bc
21
23a,c,d

Pg141

13 cd