



Name -----

Gr. 7 / A

Subject/ Math.

Revision sheet
Model Answer
Lesson 3.1: What Is a Rational Number?

1. $\frac{-4}{5} - \frac{8}{10}$

2. A: -1.8 ,

B: -0.1 ,

C: 0.6 ,

D: -0.9

3. A: $-1\frac{4}{5}$,

B: $-\frac{3}{5}$,

C: $\frac{2}{5}$

4. Write each fraction as decimal

$\begin{array}{r} 0.833 \\ 6 \overline{) 5.000} \\ \underline{-0} \\ 50 \\ \underline{-48} \\ 20 \\ \underline{-18} \\ 20 \\ \underline{-18} \\ 20 \\ \underline{-18} \\ 2 \end{array}$	$\begin{array}{r} 1.33 \\ 3 \overline{) 4.00} \\ \underline{-3} \\ 10 \\ \underline{-9} \\ 10 \\ \underline{-9} \\ 1 \end{array}$ $\frac{4}{3} = 1.\dot{3}$	$\begin{array}{r} 0.875 \\ 8 \overline{) 7.000} \\ \underline{-0} \\ 70 \\ \underline{-64} \\ 60 \\ \underline{-56} \\ 40 \\ \underline{-40} \\ 0 \end{array}$	$\begin{array}{r} 0.1875 \\ 16 \overline{) 3.0000} \\ \underline{-0} \\ 30 \\ \underline{-16} \\ 140 \\ \underline{-128} \\ 120 \\ \underline{-112} \\ 80 \\ \underline{-80} \\ 0 \end{array}$
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$\begin{array}{r} 1.2 \\ 5 \overline{) 6} \\ \underline{-5} \\ 10 \\ \underline{10} \\ 0 \end{array}$	$\begin{array}{r} 0.4545\dots \\ 11 \overline{) 5.0000} \\ \underline{44} \\ 60 \\ \underline{55} \\ 50 \\ \underline{44} \\ 60 \\ \underline{55} \\ 50 \dots \end{array}$	$\begin{array}{r} 1.1666\dots \\ 6 \overline{) 7.0000} \\ \underline{60} \\ 10 \\ \underline{6} \\ 40 \\ \underline{36} \\ 40 \\ \underline{36} \\ 40 \\ \underline{36} \\ 40 \dots \end{array}$	$\begin{array}{r} 0.333 \\ 3 \overline{) 1.000} \\ \underline{-9} \\ 10 \\ \underline{-9} \\ 10 \\ \underline{-9} \\ 1 \end{array}$
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Lesson 3.2: Adding Rational Numbers

- $-\frac{1}{2} + 1\frac{3}{4} = 1\frac{1}{4}$
 - $-19.3 + (-2.4) = -21.7$
- $-\frac{3}{4} + \frac{1}{2} = -\frac{1}{4}$
 - $\frac{3}{4} + \frac{1}{2} = 1\frac{1}{4}$
 - $\frac{3}{4} + \left(-\frac{1}{2}\right) = \frac{3}{4} + \left(-\frac{2}{4}\right) = \frac{3-2}{4} = \frac{1}{4}$
 - $-\frac{3}{4} + \left(-\frac{1}{2}\right) = -\frac{3}{4} + \left(-\frac{2}{4}\right) = \frac{-3-2}{4} = \frac{-5}{4} = -\frac{5}{4} = -1\frac{1}{4}$
- $-40.25 + 17.50 = -22.75$
 - Sarah now owes \$22.75.
- $$\begin{aligned} 2\frac{2}{5} + \left(-4\frac{1}{2}\right) &= \frac{12}{5} + \left(-\frac{9}{2}\right) \\ &= \frac{24}{10} + \left(-\frac{45}{10}\right) = \frac{24-45}{10} = \frac{-21}{10} = -2\frac{1}{10} \end{aligned}$$
 - $$\begin{aligned} -6\frac{3}{8} + \left(-1\frac{1}{5}\right) &= -\frac{51}{8} + \left(-\frac{6}{5}\right) = -\frac{255}{40} + \left(-\frac{48}{40}\right) \\ &= \frac{-255-48}{40} = \frac{-303}{40} = -7\frac{23}{40} \end{aligned}$$
- Estimates may vary.
 - 25.5
 - 1.59
 - 3.55
 - 7.38

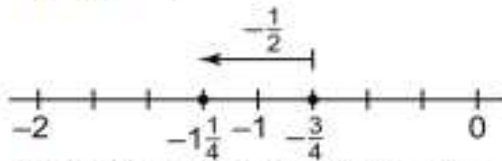
Lesson 3.3: Subtracting Rational Numbers

1. a) $1\frac{2}{3} - \frac{2}{3} = 1$

b) $-1\frac{1}{2} - \frac{3}{4} = -2\frac{1}{4}$

2. a) I sketched a number line.

$$-\frac{3}{4} - \frac{1}{2} = -1\frac{1}{4}$$



b) I used common denominators.

$$\begin{aligned} 3\frac{3}{5} - \left(-5\frac{1}{2}\right) &= \frac{18}{5} - \left(-\frac{11}{2}\right) = \frac{36}{10} - \left(-\frac{55}{10}\right) \\ &= \frac{36 - (-55)}{10} = \frac{36 + 55}{10} = \frac{91}{10} = 9\frac{1}{10} \end{aligned}$$

3. $20.4 - (-35.4) = 55.8$; the distance between the climbers is 55.8 m.

4. a) Negative

$$\begin{aligned} 3\frac{2}{7} - 4\frac{3}{5} &= \frac{23}{7} - \frac{23}{5} = \frac{115}{35} - \frac{161}{35} \\ &= \frac{115 - 161}{35} = -\frac{46}{35} = -1\frac{11}{35} \end{aligned}$$

b) Positive

$$\begin{aligned} 3\frac{1}{4} - \left(-2\frac{2}{3}\right) &= \frac{13}{4} - \left(-\frac{8}{3}\right) = \frac{39}{12} - \left(-\frac{32}{12}\right) \\ &= \frac{39 - (-32)}{12} = \frac{39 + 32}{12} = \frac{71}{12} = 5\frac{11}{12} \end{aligned}$$

5. a) Estimate: -11; Calculate: -10.6

b) Estimate: 0; Calculate: -0.41

c) Estimate: -35; Calculate: -34.47

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

b) $-3\frac{1}{4} - \left(-\frac{3}{4}\right) = -2\frac{1}{2}$

Lesson 3.4: Multiplying Rational Numbers

1.
 - a) Negative
 $(-1.2) \times 0.3 = -0.36$
 - b) Negative
 $0.34 \times (-0.5) = -0.17$
 - c) Positive
 $(-0.6) \times (-0.15) = 0.09$
 - d) Negative
 $0.9 \times (-1.2) = -1.08$

 2.
 - a) Negative
 $\frac{2}{5} \times \left(-\frac{1}{2}\right) = -\frac{1}{5}$
 - b) Negative
 $\left(-\frac{3}{2}\right) \times \frac{1}{7} = -\frac{3}{14}$
 - c) Positive
 $\left(-\frac{3}{4}\right) \times \left(-\frac{4}{5}\right) = \frac{3}{5}$

 3. $11.4 + [9 \times (-1.7)] = -3.9$
It was -3.9°C on the morning of Nov. 21.

 4.
 - a) Estimate: $(1)(-13) = -13$
Calculate: $(1.19)(-13.2) = -15.708$
 - b) Estimate: $(-9)(-2) = 18$
Calculate: $(-8.65)(-1.6) = 13.84$

 5.
 - a) $\left(\frac{10}{7}\right)\left(-\frac{13}{8}\right) = \left(-\frac{130}{56}\right) = -\frac{65}{28} = -2\frac{9}{28}$
 - b) $\left(-4\frac{3}{5}\right)\left(-2\frac{5}{12}\right) = \left(-\frac{23}{5}\right)\left(-\frac{29}{12}\right) = \frac{667}{60} = 11\frac{7}{60}$
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Lesson 3.5: Dividing Rational Numbers

1. a) i) 8
ii) -8
b) i) 20
ii) 0.2

2. a) Negative

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

- b) Negative

$$\left(-\frac{2}{3}\right) \div \left(\frac{5}{6}\right) = \left(-\frac{2}{3}\right) \times \left(\frac{6}{5}\right) = -\frac{12}{15} = -\frac{4}{5}$$

- c) Positive

$$\left(-\frac{3}{4}\right) \div \left(-\frac{5}{2}\right) = -\frac{3}{4} \times \left(-\frac{2}{5}\right) = \frac{-3}{-10} = \frac{3}{10}$$

- d) Negative

$$\frac{5}{9} \div \left(-\frac{2}{3}\right) = \frac{5}{9} \times \left(-\frac{3}{2}\right) = -\frac{15}{18} = -\frac{5}{6}$$

3. $(-3.2) \div 5 = -0.64$; So, the average rate of descent is 0.64 m/min.

4. a) $16.4 \div (-5.5) \doteq -2.98$
b) $(-0.98) \div 12.4 \doteq -0.08$

5. a) $3\frac{1}{2} \div \left(-2\frac{1}{6}\right) = \frac{7}{2} \div \left(-\frac{13}{6}\right)$
 $= \frac{21}{6} \div \left(-\frac{13}{6}\right) = -\frac{21}{13} = -1\frac{8}{13}$

- b) $\left(-2\frac{1}{5}\right) \div \left(-4\frac{3}{4}\right) = \left(-\frac{11}{5}\right) \div \left(-\frac{19}{4}\right)$
 $= \left(-\frac{11}{5}\right) \times \left(-\frac{4}{19}\right) = \frac{44}{95}$

6. a) $(-0.64) \times 2.5 = -1.6$
b) $(-5.7) \div (-3.8) = 1.5$
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Lesson 3.6: Order of Operations with Rational Numbers

1. a) $4.5 + 5.1 \div 1.7 = 4.5 + 3 = 7.5$
b) $-5.8 - 3.1 \times 0.5 = -5.8 - 1.55 = -7.35$

2. a) $\frac{2}{3} \times \left(-\frac{1}{2}\right) + \frac{5}{6} = \left(-\frac{2}{6}\right) + \frac{5}{6} = \frac{3}{6} = \frac{1}{2}$

b) $\frac{3}{8} - \frac{9}{4} \div \left[\left(-\frac{5}{4}\right) + \left(-\frac{1}{10}\right)\right]$
 $= \frac{3}{8} - \frac{9}{4} \div \left[-\frac{25}{20} - \frac{2}{20}\right]$
 $= \frac{3}{8} - \frac{9}{4} \div \left[-\frac{27}{20}\right]$
 $= \frac{3}{8} - \frac{9}{4} \times \left[-\frac{20}{27}\right]$
 $= \frac{3}{8} + \frac{5}{3}$
 $= \frac{9}{24} + \frac{40}{24}$
 $= \frac{49}{24} = 2\frac{1}{24}$

3. Substitute.

$$A = 3.5 \left(\frac{5.7 + 8.1}{2}\right) = 3.5 \left(\frac{13.8}{2}\right) = 3.5(6.9) = 24.15$$

The area of the trapezoid is 24.15 cm^2 .

4. a) $-4\frac{2}{3} \div \left[\left(-\frac{1}{3}\right) + 4\frac{1}{6}\right] + \left(-3\frac{2}{5}\right)$
 $= -\frac{14}{3} \div \left[\left(-\frac{1}{3}\right) + \frac{25}{6}\right] + \left(-\frac{17}{5}\right)$
 $= -\frac{14}{3} \div \left[\left(-\frac{2}{6}\right) + \frac{25}{6}\right] + \left(-\frac{17}{5}\right)$
 $= -\frac{14}{3} \div \frac{23}{6} + \left(-\frac{17}{5}\right)$
 $= -\frac{28}{6} \div \frac{23}{6} + \left(-\frac{17}{5}\right)$
 $= -\frac{28}{23} + \left(-\frac{17}{5}\right) = -\frac{531}{115} = -4\frac{71}{115}$

$$\begin{aligned}
 \text{b)} \quad & \frac{1}{9} - \left(-2\frac{1}{6}\right) + \left[4\frac{1}{4} + \left(-3\frac{1}{2}\right)\right]^2 + \frac{1}{5} \\
 &= \frac{14}{9} - \left(-\frac{13}{6}\right) + \left[\frac{17}{4} + \left(-\frac{7}{2}\right)\right]^2 + \frac{1}{5} \\
 &= \frac{14}{9} - \left(-\frac{13}{6}\right) + \left[\frac{17}{4} + \left(-\frac{14}{4}\right)\right]^2 + \frac{1}{5} \\
 &= \frac{14}{9} - \left(-\frac{13}{6}\right) + \left(\frac{3}{4}\right)^2 + \frac{1}{5} \\
 &= \frac{14}{9} - \left(-\frac{13}{6}\right) + \frac{9}{16} + \frac{1}{5} \\
 &= \frac{14}{9} - \left(-\frac{13}{6}\right) + \frac{9}{16} \times \frac{5}{5} \\
 &= \frac{14}{9} - \left(-\frac{13}{6}\right) + \frac{45}{32} \\
 &= \frac{1477}{288} = 5\frac{37}{288}
 \end{aligned}$$

$$\text{5.} \quad \frac{9.6 \times 12.6 - 5.1 - (-7.4) - 0.6}{(-2.9) \div 1.3 - (-6.5)} = 28.35$$
