

GRADE 7

Integers & Rational Numbers

Complete Rational Number Practice Pack

6 Worksheets • Integers • Fractions • Decimals • Real-Life Reasoning

Worksheet 1 — Comparing & Ordering Rational Numbers

Instructions: Show your working. Give fractions in simplest form and pay close attention to signs.

1. Arrange from least to greatest: $-\frac{3}{4}$, $\frac{2}{3}$, $-\frac{1}{2}$, 0, $\frac{5}{6}$.
2. Which is greater: $-\frac{7}{8}$ or $-\frac{5}{6}$? Explain.
3. Arrange from greatest to least: 1.25, -1.5 , $\frac{3}{4}$, $-\frac{2}{3}$.
4. Compare using $>$, $<$ or $=$: -0.6 ____ $-\frac{3}{5}$.
5. Which is closer to zero: $-\frac{7}{10}$ or $\frac{2}{3}$?
6. Place -1.5 , -0.5 , 0.25 and 1.25 on a number line in order.
7. Find a rational number between $-\frac{2}{5}$ and $-\frac{1}{5}$.
8. Find two different rational numbers between $\frac{3}{7}$ and $\frac{4}{7}$.

Answer Key — Comparing & Ordering Rational Numbers

1. $-\frac{3}{4}$, $-\frac{1}{2}$, 0, $\frac{2}{3}$, $\frac{5}{6}$.
2. $-\frac{5}{6}$; it is closer to zero.
3. 1.25, $\frac{3}{4}$, $-\frac{2}{3}$, -1.5 .
4. =
5. $\frac{2}{3}$ is closer to zero (about 0.667 versus 0.7).
6. -1.5 , -0.5 , 0.25, 1.25.
7. Example: $-\frac{3}{10}$.
8. Examples: $\frac{1}{2}$ and $\frac{11}{21}$.

Worksheet 2 — Adding & Subtracting Integers

Instructions: Show your working. Give fractions in simplest form and pay close attention to signs.

1. $-18 + 27$

2. $34 + (-49)$

3. $-25 - 17$

4. $42 - (-18)$

5. $-7 + 12 - 20$

6. $-35 - (-14) + 9$

7. A temperature of -4°C rises 13°C , then falls 9°C . Find the final temperature.

8. A bank account is \$75 overdrawn. A deposit of \$120 is made, followed by a withdrawal of \$45. What is the balance?

Answer Key — Adding & Subtracting Integers

1. 9
2. -15
3. -42
4. 60
5. -15
6. -12
7. 0°C
8. \$0.

Worksheet 3 — Multiplying & Dividing Rational Numbers

Instructions: Show your working. Give fractions in simplest form and pay close attention to signs.

1. $(-6)(8)$

2. $(-12)(-7)$

3. $84 \div (-12)$

4. $(-3/4)(8)$

5. $(-2/5)(-15)$

6. $3/7 \div (-9/14)$

7. A temperature changes by -2.5°C each hour for 6 hours. What is the total change?

8. A debt of \$96 is shared equally among 8 people. Represent each person's share as an integer and explain the sign.

Answer Key — Multiplying & Dividing Rational Numbers

1. -48
2. 84
3. -7
4. -6
5. 6
6. $-\frac{2}{3}$
7. -15°C
8. $-\$12$ each; the debt is represented by a negative amount.

Worksheet 4 — Operations with Rational Numbers

Instructions: Show your working. Give fractions in simplest form and pay close attention to signs.

1. $\frac{3}{4} + \frac{5}{8}$

2. $\frac{7}{6} - \frac{5}{9}$

3. $-\frac{2}{3} + \frac{7}{12}$

4. $\frac{5}{8} \times \frac{16}{15}$

5. $\frac{3}{5} \div \frac{9}{10}$

6. $-1.2 + 0.75 - 2.4$

7. A recipe needs $2\frac{1}{2}$ cups of flour. You have already used $\frac{3}{4}$ cup. How much remains?

8. Evaluate: $-\frac{3}{4} + \frac{2}{3} - (-\frac{1}{6})$.

Answer Key — Operations with Rational Numbers

1. $1\frac{11}{8} = 1\frac{3}{8}$

2. $\frac{11}{18}$

3. $-\frac{1}{12}$

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

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

6. -2.85

7. $1\frac{3}{4}$ cups

8. $\frac{1}{12}$.

Worksheet 5 — Rational Numbers in Real Life

Instructions: Show your working. Give fractions in simplest form and pay close attention to signs.

1. A diver is at -18.5 m and rises 7.25 m. What is the new depth?
2. A hiker starts at 125.5 m above sea level, descends 68.75 m, then climbs 24.5 m. What is the final elevation?
3. A recipe temperature is reduced from 180°C by 22.5°C , then increased by 7.5°C . Find the final temperature.
4. A shop records a loss of $\$12.75$ on Monday, a gain of $\$18.50$ Tuesday and a loss of $\$6.25$ Wednesday. What is the net change?
5. A submarine changes depth by -14.5 m, then $+8.75$ m, then -6.25 m. What is its total change?
6. A football team gains 3.5 yards on one play and loses 6.75 yards on the next. What is the net change?
7. A bank balance is $-\$45.60$. A deposit of $\$75.25$ is made and then $\$18.40$ is withdrawn. Find the final balance.
8. A number is multiplied by -4 and the result is 18 . What is the original number?

Answer Key — Rational Numbers in Real Life

1. -11.25 m.
2. 81.25 m.
3. 165°C .
4. $-\$0.50$.
5. -12 m.
6. -3.25 yards.
7. $\$11.25$.
8. -4.5 .

Worksheet 6 — Rational Number Challenge

Instructions: Show your working. Give fractions in simplest form and pay close attention to signs.

1. Find x : $x - \frac{3}{4} = -\frac{5}{8}$.
2. Find x : $-2x = \frac{7}{3}$.
3. A number is increased by 2.5 and then multiplied by -2 to give -9 . Find the original number.
4. Find the value of: $[-\frac{3}{5} + \frac{1}{2}] \div (-\frac{1}{10})$.
5. Three consecutive integers have a sum of -24 . Find them.
6. The product of two rational numbers is negative. What must be true about their signs?
7. A tank level changes by $+2.75$ L, -4.5 L, $+1.25$ L and -0.5 L. What is the total change?
8. A student claims: "The sum of two negative rational numbers can be positive." Is the claim correct? Explain.

Answer Key — Rational Number Challenge

1. $x = 1/8$.
2. $x = -7/6$.
3. $x = 2$.
4. 1.
5. $-9, -8, -7$.
6. One must be positive and the other negative.
7. -1 L.
8. No. The sum of two negative numbers is always negative.