GRADE 7

Integers & Rational Numbers

Complete Rational Number Practice Pack

6 Worksheets
Integers • Fractions • Decimals
Operations • Real-life reasoning • Challenge questions

Show your working • Simplify fractions • Check your signs

Worksheet 1 — Comparing & Ordering Rational Numbers

Show your working. Give fractions in simplest form and compare numbers carefully, paying attention to signs.

1. Arrange from least to greatest: –3/4, 2/3, –1/2, 0, 5/6.

2. Which is greater: –7/8 or –5/6? Explain.

3. Arrange from greatest to least: 1.25, –1.5, 3/4, –2/3.

4. Compare using >, < or =: –0.6 ___ –3/5.

5. Which is closer to zero: –7/10 or 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 –2/5 and –1/5.

8. Find two different rational numbers between 3/7 and 4/7.

Answer Key — Comparing & Ordering Rational Numbers

Suggested answers. Accept equivalent simplified forms where appropriate.

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

Worksheet 2 — Adding & Subtracting Integers

Show your working. Pay close attention to positive and negative 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 final balance?

Answer Key — Adding & Subtracting Integers

Suggested answers. Accept equivalent simplified forms where appropriate.

1.	9
2.	–15
3.	–42
4.	60
5.	–15
6.	–12
7.	0°C
8.	$0 (the account is no longer overdrawn).

Worksheet 3 — Multiplying & Dividing Rational Numbers

Show your working. Give fractional answers in simplest form and pay close attention to signs.

1. (–6)(8)

2. (–12)(–7)

3. 84 ÷ (–12)

4. (–3/4)(8)

5. (–2/5)(–15)

6. 3/7 ÷ (–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

Suggested answers. Accept equivalent simplified forms where appropriate.

1.	–48
2.	84
3.	–7
4.	–6
5.	6
6.	–2/3
7.	–15°C
8.	–$12 each; the debt is represented by a negative amount.

Worksheet 4 — Operations with Rational Numbers

Show your working. Give fractional answers in simplest form and pay close attention to signs.

1. 3/4 + 5/8

2. 7/6 – 5/9

3. –2/3 + 7/12

4. 5/8 × 16/15

5. 3/5 ÷ 9/10

6. –1.2 + 0.75 – 2.4

7. A recipe needs 2 1/2 cups of flour. You have already used 3/4 cup. How much remains?

8. Evaluate: –3/4 + 2/3 – (–1/6).

Answer Key — Operations with Rational Numbers

Suggested answers. Accept equivalent simplified forms where appropriate.

1.	11/8 = 1 3/8
2.	11/18
3.	–1/12
4.	2/3
5.	2/3
6.	–2.85
7.	1 3/4 cups
8.	1/12

Worksheet 5 — Rational Numbers in Real Life

Show your working. Include the correct units in your answers.

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 on Tuesday and a loss of $6.25 on 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

Suggested answers. Accept equivalent simplified forms where appropriate.

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

Show your working. Give fractional answers in simplest form and explain your reasoning where asked.

1. Find x: x – 3/4 = –5/8.

2. Find x: –2x = 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: [–3/5 + 1/2] ÷ (–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

Suggested answers. Accept equivalent simplified forms where appropriate.

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.