

Grade 7 - Multiplying and Dividing Rational Numbers - Test Answer Key

Common Core 7.NS.A.2 · maths-pdf.fr/en/

Use this answer key and scoring guide to grade the multiplying rational numbers test. Each solution shows the full work, and the scoring note explains how the points are awarded. Give partial credit for correct steps even when the final answer is wrong.

Grade 7 · Common Core State Standards: **7.NS.A.2**

Question 1 - Integers [2 pts]

- a. -63
- b. 9
- c. -30 (three negative factors)
- d. 0

-63, 9, -30, 0

Scoring: Half a point for each correct value; round the total up.

Question 2 - Sign explanation [2 pts]

Multiplying by a negative number reverses direction, so doing it twice returns to the original direction.

Example: $-3 \times (-4) = 12$, and the pattern $-3 \times 2 = -6$, $-3 \times 1 = -3$, $-3 \times 0 = 0$, $-3 \times (-1) = 3$ continues upward by 3 each time.

The product is positive

Scoring: 1 point for a correct reason; 1 point for a correct example.

Question 3 - Decimals [2 pts]

- a. -0.6
- b. 30

-0.6; 30

Scoring: 1 point for each.

Question 4 - Fractions [2 pts]

a. $-\frac{30}{45} = -\frac{2}{3}$

b. $\frac{7}{8} \times 4 = \frac{28}{8} = \frac{7}{2} = 3\frac{1}{2}$

$-\frac{2}{3}; 3\frac{1}{2}$

Scoring: 1 point for each.

Question 5 - Fractions as decimals [2 pts]

a. $3 \div 16 = 0.1875$, terminating.

b. $7 \div 12 = 0.58333 = 0.58\bar{3}$, repeating.

0.1875 terminating; $0.58\bar{3}$ repeating

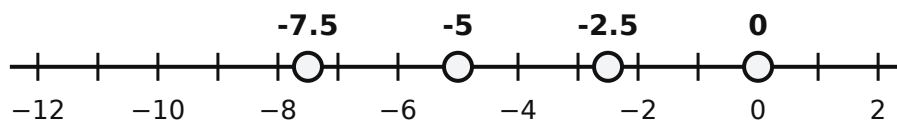
Scoring: 1 point for each decimal with the correct type.

Question 6 - Number line [2 pts]

Three jumps of 2.5 to the left: $0 \rightarrow -2.5 \rightarrow -5 \rightarrow -7.5$.

$3 \times (-2.5) = -7.5$

-7.5



Three jumps of 2.5 units left.

Scoring: 1 point for the repeated addition or jumps; 1 point for -7.5.

Question 7 - Three fractions [2 pts]

Three negative factors give a negative product.

$$\frac{3}{2} \times \frac{5}{3} \times \frac{2}{5} = \frac{30}{30} = 1$$

-1

Scoring: 1 point for the sign; 1 point for the value.

Question 8 - Savings plan [3 pts]

- a. $-4.25 \times 6 = -25.5$, so \$25.50 less.
- b. $-25.5 \div 3 = -8.5$, so \$8.50 less in each.
- c. $-51 \div (-4.25) = 12$ weeks.

Weeks	Total change
6	-\$25.50
12	-\$51.00

Totals over time.

Scoring: 1 point for each part.

Question 9 - Mean change [3 pts]

- a. $-3 + 5 - 2.5 - 4.5 = -5$ degrees.
- b. $-5 \div 4 = -1.25$ degrees per day.
- c. $-1.25 \times 10 = -12.5$ degrees.

Total	Mean	10 days
-5	-1.25	-12.5

Summary of results.

Scoring: 1 point for each part.

Total
20 points