

Multiplying and Dividing Rational Numbers: math practice, Grade 7 – download the PDF

23 problems graded by difficulty (★ easy, ★★ medium, ★★★ hard). Try first, without looking at the solutions!

1 Sign rules

★ ★ ★

Compute. a) $(-6)(5)$ b) $(-8)(-3)$ c) $7(-9)$ d) $(-1)(-1)(-1)$

2 Dividing integers

★ ★ ★

Compute. a) $-48 \div 6$ b) $-56 \div (-7)$ c) $45 \div (-9)$ d) $0 \div (-13)$

3 Missing numbers

★ ★ ★

Find the missing integer. a) $(-5) \cdot \square = 35$ b) $\square \div (-4) = 9$ c) $72 \div \square = -8$

4 Multiplying fractions

★ ★ ★

Compute and simplify. a) $\frac{2}{5} \cdot \frac{3}{7}$ b) $\frac{3}{4} \cdot \frac{8}{15}$ c) $-\frac{1}{2} \cdot \frac{6}{7}$

5 Reciprocals



Write the reciprocal of each number. a) $\frac{3}{8}$ b) -5 c) $2\frac{1}{2}$

6 Fractions to decimals



Write each fraction as a decimal. Use a bar for repeating digits. a) $\frac{3}{8}$ b) $\frac{7}{20}$ c) $\frac{5}{6}$ d) $\frac{2}{9}$

7 True or false?



True or false? Justify. a) The product of two negative numbers is negative. b) $-12 \div (-3)$ is positive. c) The reciprocal of $-\frac{2}{3}$ is $\frac{3}{2}$.

8 Milk for pancakes



One batch of pancakes needs $\frac{3}{4}$ liter of milk. How much milk do $2\frac{2}{3}$ batches need?

9 Mixed number division



Compute. a) $3\frac{1}{2} \div 1\frac{3}{4}$ b) $-2\frac{2}{5} \div \frac{3}{10}$

10 Integer order of operations



Evaluate. a) $-3 + 4(-5 + 2)^2$ b) $18 \div (-3) \cdot 2 - (-4)$

11 Terminate or repeat?



Without dividing, decide which fractions give terminating decimals: $\frac{7}{8}$, $\frac{5}{12}$, $\frac{11}{25}$, $\frac{4}{21}$.
Explain.

12 Repeating blocks



Use long division to write as repeating decimals. a) $\frac{4}{15}$ b) $\frac{5}{7}$ c) $\frac{7}{12}$ d) $\frac{4}{11}$

13 Distributive shortcuts



Use the distributive property to compute mentally. a) $15 \left(-\frac{2}{5} + \frac{1}{3} \right)$ b) $24 \left(\frac{5}{6} - \frac{3}{8} \right)$

14 Freezer



A freezer starts at 14°F and its temperature changes by -2.5°F every hour for 6 hours.
What is the final temperature?

15 Find the error



A student wrote $-\frac{2}{3} \div \frac{4}{9} = -\frac{8}{27}$. Explain the mistake and give the right answer.

16 Name the property



Name the property. a) $7 \cdot (-4) = (-4) \cdot 7$ b) $(2 \cdot (-3)) \cdot 5 = 2 \cdot ((-3) \cdot 5)$ c)
 $-9 \cdot 1 = -9$ d) $\frac{5}{6} \cdot \frac{6}{5} = 1$ e) $4(x + 3) = 4x + 12$

17 Bank balance

Dana's account has 60 dollars. Each week 18.50 dollars are withdrawn automatically for 7 weeks with no deposits. What is the balance?

18 Rain barrel

A 60-gallon barrel is $\frac{5}{6}$ full. Then $\frac{3}{10}$ of the water is poured into buckets that each hold $2\frac{1}{2}$ gallons. How many buckets are filled?

19 Mean of changes

Five mornings at a ski resort were -3.5 , 2 , -1.25 , 0.75 and -4 degrees F relative to freezing. Find the mean.

20 A big expression

Evaluate. a) $\frac{-\frac{3}{4} + \frac{5}{6}}{-\frac{1}{3}}$ b) $2\frac{1}{2} \cdot \left(-\frac{4}{5}\right) - (-3)^2 \div (-6)$

21 Odd and even

a) Compute $(-1)^{15}$, $(-1)^{20}$ and $(-2)^5$. b) Without a calculator, find the sign and value of $(-2)(-3)(-1)(-5)(-1)(-2)(-4)$. Explain your reasoning.

22 Ordering mixed forms

Order from least to greatest: $\frac{5}{7}$, 0.7 , $\frac{8}{11}$, $0.\overline{7}$. Show the decimal values.

23

Reading rate

Maya reads $3\frac{1}{2}$ pages in $\frac{1}{4}$ hour. a) How many pages per hour? b) At that rate, how long does a 49-page chapter take?

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