

### Chapter 3 Practice Test: Rational Numbers

#### Student Self-Assessment

Please fill in the following after completing the practice test and looking at the correct solutions.

Learning Outcomes		Practice Questions	I get all of it	I get it, but made some errors	I get only some of it	I don't get it at all
A3	Demonstrate an understanding of rational numbers by: comparing and ordering rational numbers and solving problems that involve arithmetic operations on rational numbers.	#1-6				
A4	Explain and apply the order of operations with and without technology.	#7-9				

What do you need to work on? What is your plan to ensure you will be successful come test day?

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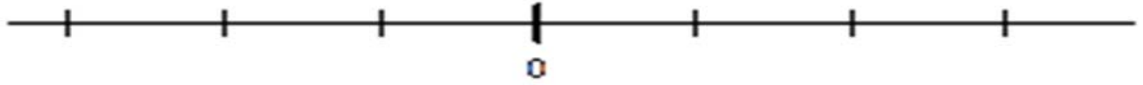
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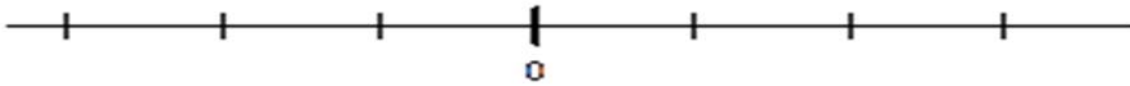
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1. Order these rational numbers from **least to greatest**, and place them on a number line.

$$-\frac{7}{3} \quad 1.7 \quad \frac{16}{9} \quad -0.45 \quad \frac{1}{3} \quad -2.1$$



2. a) Identify **two rational numbers** that are between  $-1.2$  and  $-1\frac{3}{5}$  and place them on a number line.



- b) Why are  $-1.2$  and  $-1\frac{3}{5}$  **rational** numbers?

3. Find the sum or difference. Please show all work.

a)  $\frac{4}{5} + \left(-\frac{3}{10}\right)$

b)  $-7.8 + 0.4$

c)  $-7.4 - (-6.1)$

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

4. Find the product or quotient. Please show all work.

a)  $\left(-4\frac{2}{3}\right) \times 1\frac{5}{7}$

b)  $8.7 \times (-2.1)$

c)  $(-3.2) \div (-0.5)$

d)  $\left(-2\frac{3}{4}\right) \div \frac{1}{3}$

5. A baker has a cupcake recipe that calls for  $2\frac{1}{4}$  cups of flour. He needs to **triple** the recipe. How many cups of flour will he need? Show your work clearly.

6. A carpenter has  $16\frac{1}{2}$  feet of baseboard material. If he cuts off 5 pieces, each with length  $3\frac{1}{4}$  feet, how much material is left? Show your work clearly.

7. Evaluate each expression. Please show all work.

a)  $-3.1 + 4.5 \times (-2.9) - 7.2 \div (-3)$

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

8. Both Amanda and Emilee evaluated the expression below. Amanda's answer was 40.8 and Emilee's answer was 54.6. Who is correct? Please show your work.

$$2.3 + (-11.2) \div (-0.2) - 3.7$$

9. Indicate where the student first went wrong for each question below. Show the correct solution that leads to a correct answer. Please show all of your work clearly.

a) $(-3.7) \times (-2.8 + 1.5) - 4.8 \div (-1.2)$
$= (-3.7) \times (1.3) - 4.8 \div (-1.2)$
$= -4.81 - 4.8 \div (-1.2)$
$= -9.61 \div (-1.2)$
$= 8.008\bar{3}$
b) $-\frac{3}{8} - \frac{4}{5} \times \frac{3}{10} \div \left(-\frac{4}{5}\right)$
$= -\frac{15}{40} - \frac{32}{40} \times \frac{3}{10} \div \left(-\frac{4}{5}\right)$
$= -\frac{47}{40} \times \frac{3}{10} \div \left(-\frac{4}{5}\right)$
$= -\frac{141}{400} \div \left(-\frac{4}{5}\right)$
$= -\frac{141}{400} \times \left(-\frac{5}{4}\right)$
$= \frac{(-141) \times (-5)}{400 \times 4}$
$= \frac{705}{1600}$

## Answers to Chapter 3 Practice Test

- $-\frac{7}{3}, -2.1, -0.45, \frac{1}{3}, 1.7, \frac{16}{9}$
- a) Since  $-1\frac{3}{5} = -1\frac{6}{10} = -1.6$ , any two rational numbers between  $-1.6$  and  $-1.2$  would be correct. For example,  $-1.5$  and  $-1.4$ .  
b) They can both be written as the ratio of two numbers (i.e. as fractions):  
$$-1.2 = -\frac{12}{10} \text{ and } -1\frac{3}{5} = -\frac{8}{5}$$
- a)  $\frac{1}{2}$     b)  $-7.4$     c)  $-1.3$     d)  $-6\frac{1}{6}$
- a)  $-8$     b)  $-18.27$     c)  $6.4$     d)  $-8\frac{1}{4}$
- $6\frac{3}{4}$  cups of flour
- $\frac{1}{4}$  ft
- a)  $-13.75$     b)  $3\frac{1}{2}$
- Emilee is correct.
- a) The sign of the answer to the first step,  $(-2.8 + 1.5)$ , is incorrect. Later on, the student subtracts before doing the division first. Correct answer: 8.81.  
b) The student subtracts before doing the multiplication first. Correct answer:  $-\frac{3}{40}$