Unit 5 Lesson 13: Expressions with Rational Numbers

1 True or False: Rational Numbers (Warm up)

Student Task Statement

Decide if each statement is true or false. Be prepared to explain your reasoning.

1. $(-38.76)(-15.6)$ is negative
2. $10,000 - 99,999 < 0$
3. $\left(\frac{3}{4}\right)\left(-\frac{4}{3}\right) = 0$
4. $(30)(-80) - 50 = 50 - (30)(-80)$

2 Card Sort: The Same But Different

Student Task Statement

Your teacher will give you a set of cards. Group them into pairs of expressions that have the same value.

3 Near and Far From Zero

Student Task Statement

a	b	$-a$	$-4b$	$-a + b$	$a \div -b$	a^2	b^3
$-\frac{1}{2}$	6						
$\frac{1}{2}$	-6						
-6	$-\frac{1}{2}$						

1. For each set of values for a and b, evaluate the given expressions and record your answers in the table.

2. When $a = -\frac{1}{2}$ and $b = 6$, which expression:

   has the largest value? has the smallest value? is the closest to zero?

3. When $a = \frac{1}{2}$ and $b = -6$, which expression:

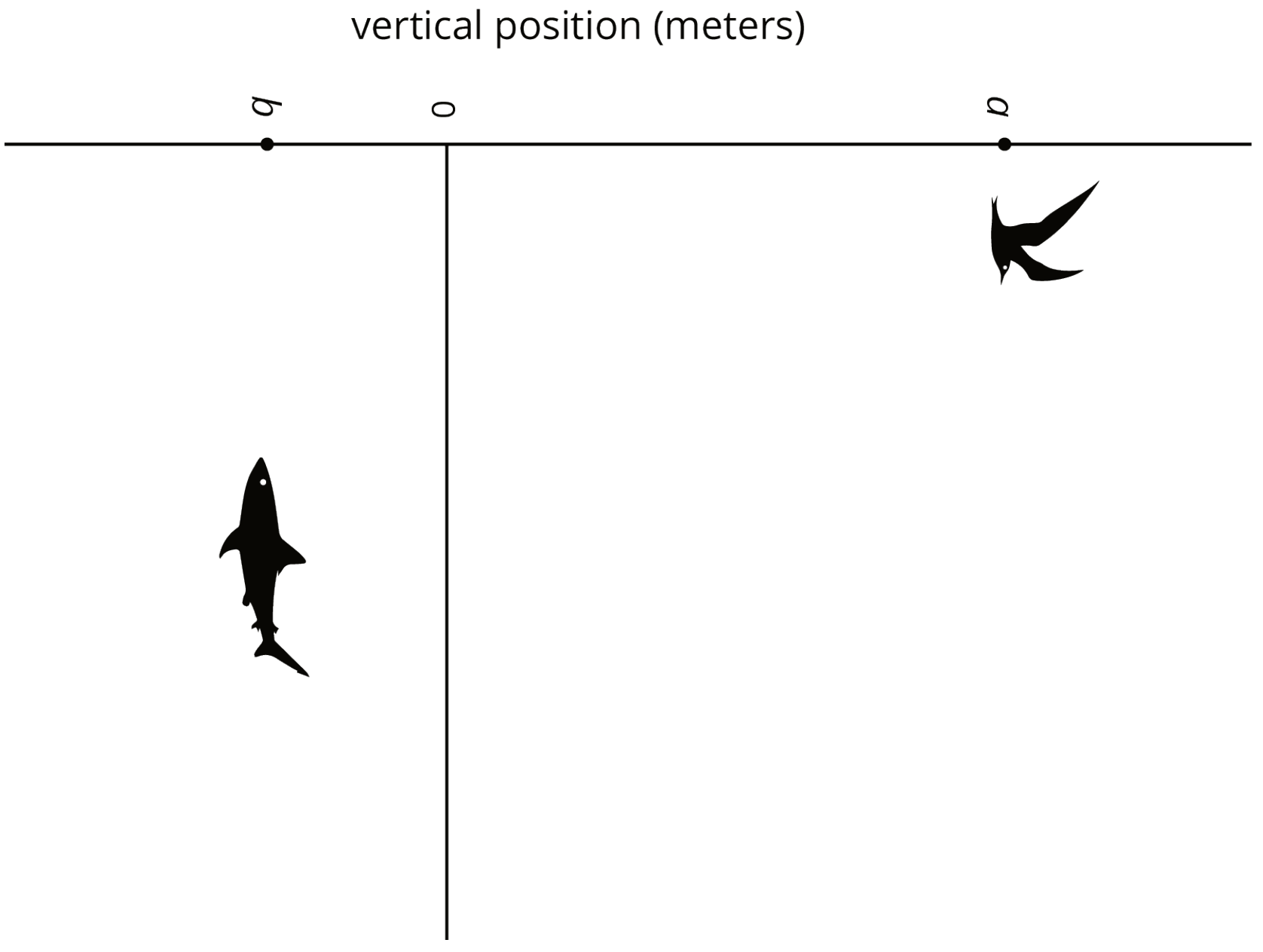
   has the largest value? has the smallest value? is the closest to zero?

4. When $a = -6$ and $b = -\frac{1}{2}$, which expression:

   has the largest value? has the smallest value? is the closest to zero?

4 Seagulls and Sharks Again (Optional)

Student Task Statement


vertical position (meters)
b
0
a

A seagull has a vertical position a, and a shark has a vertical position b. Draw and label a point on the vertical axis to show the vertical position of each new animal.

1. A dragonfly at d, where $d = -b$
2. A jellyfish at j, where $j = 2b$
3. An eagle at e, where $e = \frac{1}{4}a$.
4. A clownfish at c, where $c = \frac{-a}{2}$
5. A vulture at v, where $v = a + b$
6. A goose at g, where $g = a - b$