

## Rational Unit Review Answer Key

1. OPPOSITES

2. RATIONAL NUMBER

3. PERFECT SQUARE

4. NON-PERFECT SQUARE

5.  $\frac{3}{24}$ ,  $\frac{-10}{-6}$ ,  $\frac{-6}{4}$ ,  $\frac{82}{-12}$

6. a) = b) < c) > d) = e) > f) >

7. a) Example: Axel wrote each fraction in an equivalent form so both fractions had a common denominator of 4. He then compared the numerators to find that  $-6 < -5$ , so  $-1\frac{1}{2} < -1\frac{1}{4}$

b) Example: Bree wrote  $-1\frac{1}{2}$  as  $-1.5$  and  $-1\frac{1}{4}$  as  $-1.25$ . She compared the decimal portions to find that  $-1.5 < -1.25$ .

c) Example: Caitlin compared  $-\frac{2}{4}$  and  $-\frac{1}{4}$  and found that  $-\frac{2}{4} < -\frac{1}{4}$ .

d) Example: Caitlin's method is preferred because it involves fewer computations.

8. Example:  $-\frac{5}{6}$  and  $\frac{5}{-7}$

9. a) -0.95 b) 1.49 c) -8.1 d) 1.3

10. a) -0.6 b) 8.1 c) -6.5 d) 5.3

11.  $1.6\text{ }^{\circ}\text{C/h}$

12. \$1.3 million profit

13. a)  $-\frac{2}{15}$  b)  $-1\frac{1}{8}$  c)  $-1\frac{9}{10}$  d)  $4\frac{7}{12}$

14. a)  $\frac{4}{9}$  b)  $-\frac{20}{21}$  c)  $-12\frac{5}{6}$  d)  $1\frac{17}{22}$

15. The quotients are the same. Example: The quotient of two rational numbers with the same sign is positive.

16. 420 h

17.  $\frac{9}{10}$

18. a) Yes, both 64 and 121 are perfect squares.

b) No, 7 is not a perfect square.

c) Yes, 49 and 100 are perfect squares.

d) No, 10 is not a perfect square.

19. Example: The estimate is 14.8. 220 is between the perfect square numbers 196 and 225. The square roots of 196 and 225 are 14 and 15. Since 220 is closer to 225, the value in the tenths place should be close to 8 or 9.

20. 0.0225

21. a) 3.6 b) 0.224

22. a) Example: When the number is greater than 1. The square root of 49 is 7.

b) Example: When the number is smaller than 1. The square root of 0.16 is 0.4.

23. a) 1.5 cm; Example: One method is to find the square root of 225, and divide by 10.

A second method is to divide 225 by 100, then find the square root of the quotient.

b) 21.2 cm

24. a) 2.5 cans b) 6.6 m by 6.6 m

25. 15.7 s

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