Worksheet

1. Which of the following are rational numbers?

   a. $\dfrac{-7}{15}$ b. $\dfrac{3}{7}$ c. $\dfrac{0}{7}$ d. $\dfrac{7}{0}$

   e. $\dfrac{12}{12}$ f. $\dfrac{5}{5 \times 0}$ g. $\dfrac{26}{15-(3 \times 5)}$ h. $\dfrac{15-(3 \times 5)}{26}$

2. Express the following rational numbers in the standard form.

   a. $\dfrac{-28}{48}$ b. $\dfrac{84}{32}$ c. $\dfrac{396}{156}$ d. $\dfrac{-7}{-28}$

3. List 3 rational numbers between:

   a. $\dfrac{1}{2}$ and $\dfrac{2}{3}$ b. $\dfrac{5}{12}$ and $\dfrac{7}{10}$ c. $\dfrac{3}{11}$ and $\dfrac{2}{5}$ d. $\dfrac{8}{13}$ and $\dfrac{9}{11}$

4. Write 3 equivalent rational numbers for each of the following.

   a. $\dfrac{5}{9}$ b. $\dfrac{-5}{12}$ c. $\dfrac{-7}{11}$ d. $\dfrac{-3}{14}$

5. Represent the following on a number line:

   a. $\dfrac{1}{2}$ b. $\dfrac{1}{4}$ c. $\dfrac{-3}{8}$ d. $\dfrac{-7}{5}$

6. The product of two rational numbers is zero. If one of the rational numbers is zero, then find the other number.

7. The area of a rectangle is 38 m². If one of its sides is $4\dfrac{3}{4}$ m, find the perimeter.

8. Write three numbers whose decimal representation is non-terminating and recurring.

9. Write three numbers whose decimal representation is terminating.

10. Classify the following statements as True or False.

    a. Every fraction is a rational number.

    b. Every rational number is a fraction.

    c. Every rational number has a reciprocal.

    d. Every fraction has a reciprocal.

    e. Every positive rational number is to the right of every negative rational number on the number line.

    f. The reciprocal of $\left(\dfrac{3}{-7}\right)^{-1}$ is $\dfrac{3}{7}$.

    g. The product of a rational number and its additive inverse is 1.

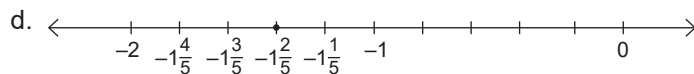   h. $\dfrac{5}{0}$ is a rational number.

    i. The reciprocal of zero is zero.

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j. 0 is the smallest rational number.

k. Between two rational numbers, there exists infinite rational numbers.

11. By what number should $\dfrac{-6}{19}$ be multiplied in order to get $\dfrac{36}{152}$?

12. Without actual division, which of these rational numbers can be represented by a terminating decimal?

    a. $\dfrac{21}{56}$ b. $\dfrac{69}{184}$ c. $\dfrac{42}{245}$ d. $\dfrac{21}{150}$

13. Choose the correct answer.

    a. Zero is a

        i. Natural number   ii. Prime number

        iii. Composite number   iv. Whole number

    b. The integral value of x for which $\dfrac{7}{x}$ is a rational number is

        i. 0   ii. 1

        iii. 7   iv. any integer except 0

    c. The additive inverse of $\dfrac{-3}{7}$ is

        i. $\dfrac{7}{3}$ ii. $\dfrac{-7}{3}$ iii. $\dfrac{3}{7}$ iv. 0

    d. If $\dfrac{x}{y}$ is a rational number such that $x < y$, then $\dfrac{x}{y}$ is

        i. > 1 ii. < 1

        iii. $= 1$ iv. may be less or greater than 1

    e. The value of 1.999 … is

        i. $\dfrac{19}{10}$ ii. $\dfrac{199}{100}$ iii. $\dfrac{1999}{1000}$ iv. 2

    f. Between two rational numbers, there lie

        i. 1 rational number

        ii. two rational numbers

        iii. no rational number

        iv. infinite number of rational numbers

Answers to Worksheet

1. a, b, c, e, h   2. a. $\dfrac{-7}{12}$ b. $\dfrac{21}{8}$ c. $\dfrac{33}{13}$ d. $\dfrac{1}{4}$

3. a. $\dfrac{7}{12}, \dfrac{13}{24}, \dfrac{5}{8}$ (Answer may vary)   b. $\dfrac{67}{120}, \dfrac{39}{80}, \dfrac{151}{240}$ (Answer may vary)

    c. $\dfrac{37}{110}, \dfrac{81}{220}, \dfrac{67}{220}$ (Answer may vary)   d. $\dfrac{205}{286}, \dfrac{381}{572}, \dfrac{439}{572}$ (Answer may vary)

4. a. $\dfrac{10}{18}, \dfrac{15}{27}, \dfrac{20}{36}$ (Answer may vary)   b. $\dfrac{-10}{24}, \dfrac{-15}{36}, \dfrac{-20}{48}$ (Answer may vary)

c. $\dfrac{-14}{22}, \dfrac{-21}{33}, \dfrac{-28}{44}$ (Answer may vary)   d. $\dfrac{-6}{28}, \dfrac{-9}{42}, \dfrac{-12}{56}$ (Answer may vary)

5. a.

b.

c.

d.
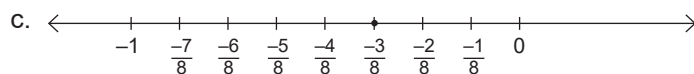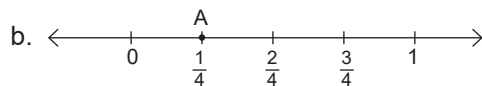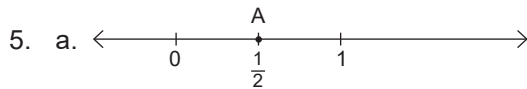
6. Any rational number   7. 25.5 m   8. $\dfrac{1}{3}, \dfrac{1}{7}, \dfrac{2}{9}$

9. $\dfrac{1}{4}, \dfrac{3}{12}, \dfrac{3}{50}$ (Answer may vary) 10. True: a, d, e, k; False: b, c, f, g, h, i, j

11. $\dfrac{-6}{8}$ 12. a, b, d

13. a. (iv)   b. (iv)   c. (iii)   d. (ii)   e. (d)   f. (iv)

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