

1.1 Real Number: Algebra Essentials

Solutions to the Notes – No Work.

1. Rational numbers

- a. $\frac{7}{1}$
- b. $\frac{0}{1}$
- c. $-\frac{8}{1}$

- d. $\frac{11}{1}$
- e. $\frac{3}{1}$
- f. $-\frac{4}{1}$

2. Terminating or repeating

- a. $-0.\overline{714285}$ repeating
- b. 3 (or 3.0) terminating
- c. 0.52 terminating

- d. 4 terminating
- e. $0.\overline{615384}$ repeating
- f. -0.85 terminating

3. Rational or irrational

- a. 5 rational
- b. $3.\overline{6}$ rational
- c. cannot simplify-irrational
- d. 0.5 rational
- e. irrational

- f. rational
- g. rational
- h. irrational
- i. rational
- j. irrational

4. Classify

- a. Negative, rational, left
- b. Positive, irrational, right
- c. Negative, rational, left
- d. Negative, irrational, left
- e. Positive, rational, right

- f. Positive, irrational, right
- g. Negative, rational, left
- h. Positive, rational, right
- i. Negative, irrational, left
- j. Positive, rational, right

5. Classify

- a. Natural, whole, integer, rational
- b. Rational
- c. Irrational
- d. Integer, rational
- e. Irrational

- f. Integer, rational
- g. Whole integer, rational
- h. Natural, whole, integer, rational
- i. Irrational
- j. Rational

6. Order of operations

- a. 4
- b. 0
- c. 12
- d. 8
- e. 132

- f. 10
- g. 2
- h. 4.5
- i. 25
- j. 26

1.1 Real Number: Algebra Essentials

7. Properties – see actual notes

8. Constants and variables

a. $C: 5 \quad V: x$

b. $C: \frac{4}{3}, \pi \quad V: r$

c. $C: 2 \quad V: m, n$

d. $C: 2, \pi \quad V: r, h$

e. $C: 2 \quad V: L, W$

f. $C: 4 \quad V: y$

9. Evaluate

a. -7

b. -5

c. -6

d. -15

e. 5

f. 11

g. 9

h. 26

10. Evaluate each expression for the given values.

a. 0

b. $\frac{10}{19}$

c. $\frac{500}{3}\pi$

d. -85

e. 12

f. 11

g. $\frac{121}{3}\pi$

h. 1728

i. 3

11. Using a Formula

a. $180\pi \text{ in}^2$

b. $1,152 \text{ cm}^2$

12. Simplify each algebraic expression

a. $4x - 5y - 7$

b. $7r - 11$

c. $\frac{10}{3}t - \frac{13}{4}s$

d. $5mn - 5m + n$

e. $-2y - 2z$

f. $\frac{-2}{t} - 1$

g. $3pq - 4p + q$

h. $7r - 2s + 6$

13. Simplifying Formulas

a. $P = 2(L + W)$

b. $A = P(1 + rt)$