

MULTIPLE CHOICE

1. Classify the number as to type. (For example, $\frac{1}{2}$ is rational and real, where as $\sqrt{5}$ is irrational and real.)

$$-\sqrt{2}$$

- a. rational
- b. natural
- c. irrational
- d. whole
- e. integer

ANS: C PTS: 1

2. True or False?

Every integer is a rational number.

- a. True
- b. False

ANS: A PTS: 1

3. State the real number property that justifies the statement.

$$(4x + y) + z = z + (4x + y)$$

- a. Distributive law for multiplication with respect to addition
- b. Commutative law of addition
- c. Inverse law of addition
- d. Associative law of addition
- e. Identity law of addition

ANS: B PTS: 1

4. State the real number property that justifies the statement.

$$5x + (6y + z) = (5x + 6y) + z$$

- a. Inverse law of addition
- b. Associative law of addition
- c. Distributive law for multiplication with respect to addition
- d. Identity law of addition
- e. Commutative law of addition

ANS: B PTS: 1

5. State the real number property that justifies the statement.

$$u(v + w) = (v + w)u$$

- a. Associative law of multiplication
- b. Identity law of multiplication
- c. Commutative law of multiplication
- d. Inverse law of multiplication
- e. Associative law of addition

ANS: C PTS: 1

6. State the real number property that justifies the statement.

$$a^4(b^7c) = (a^4b^7)c$$

- a. Associative law of addition
- b. Identity law of multiplication
- c. Commutative law of multiplication
- d. Associative law of multiplication
- e. Distributive law for multiplication with respect to addition

ANS: D PTS: 1

7. State the real number property that justifies the statement.

$$(a + 3b)(a - 4b) = a(a - 4b) + 3b(a - 4b)$$

- a. Commutative law of multiplication
- b. Distributive law for multiplication with respect to addition
- c. Associative law of multiplication
- d. Associative law of addition
- e. Identity law of multiplication

ANS: B PTS: 1

8. State the real number property that justifies the statement.

$$(2x + 3y) + (x + 2y) = 2x + [3y + (x + 2y)]$$

- a. Distributive law for multiplication under addition
- b. Associative law of multiplication
- c. Commutative law of multiplication
- d. Associative law of addition
- e. Commutative law of addition

ANS: D PTS: 1

9. State the real number property that justifies the statement.

$$a - [-(4c + 5d)] = a + (4c + 5d)$$

- a. Commutative law of multiplication
- b. Property 2 of negatives
- c. Property 3 of negatives

- d. Property 1 of negatives
- e. Associative law of multiplication

ANS: D PTS: 1

10. State the real number property that justifies the statement.

$$-(8x + y)[-(2x + 7y)] = (8x + y)(2x + 7y)$$

- a. Property 2 of negatives
- b. Commutative law of multiplication
- c. Associative law of multiplication
- d. Property 3 of negatives
- e. Property 1 of negatives

ANS: D PTS: 1

11. State the real number property that justifies the statement.

$$0(7x + 3y) = 0$$

- a. Property 1 of zero properties
- b. Associative law of multiplication
- c. Property 2 of negatives
- d. Commutative law of multiplication
- e. Property 2 of zero properties

ANS: A PTS: 1

12. State the real number property that justifies the statement.

$$\text{If } (x - 9y)(x + 2y) = 0, \text{ then } x = 9y \text{ or } x = -2y.$$

- a. Property 2 of negatives
- b. Commutative law of multiplication
- c. Associative law of multiplication
- d. Property 1 of zero properties
- e. Property 2 of zero properties

ANS: E PTS: 1

13. State the real number property that justifies the statement.

$$\text{If } (x - 5)(2x + 3) = 0, \text{ then } x = 5 \text{ or } x = -\frac{3}{2}.$$

- a. Property 5 of quotients and distributive law
- b. Property 3 of quotients
- c. Property 1 of zero properties
- d. Property 2 of zero properties
- e. Properties 1 and 4 of quotients

ANS: D PTS: 1

14. State the real number property that justifies the statement.

$$\frac{(x + 1)(x - 5)}{(8x + 1)(x - 5)} = \frac{x + 1}{8x + 1}$$

- a. Property 4 of quotients
- b. Property 1 of quotients
- c. Property 3 of quotient
- d. Property 5 of quotients
- e. Property 2 of quotients

ANS: E PTS: 1

15. State the real number property that justifies the statement.

$$\frac{(4x + 1)(x + 4)}{(4x - 1)(x + 4)} = \frac{(4x + 1)}{(4x - 1)}$$

- a. Properties 1 and 4 of quotients
- b. Property 2 of quotients
- c. Property 1 of quotients
- d. Property 3 of quotients
- e. Property 5 of quotients and distributive law

ANS: B PTS: 1

16. State the real number property that justifies the statement.

$$\frac{a}{b + c} + \frac{c}{b} = \frac{ab + bc + c^2}{b(b + c)}$$

- a. Property 3 of quotients and distributive law
- b. Property 5 of quotients and distributive law
- c. Property 4 of quotients and distributive law
- d. Property 6 of quotients and distributive law
- e. Property 7 of quotients and distributive law

ANS: D PTS: 1

17. State the real number property that justifies the statement.

$$\frac{x + 7y}{7x + 1} - \frac{y}{x} = \frac{x^2 - y}{x(7x + 1)}$$

- a. Property 5 of quotients and distributive law
- b. Property 4 of quotients and distributive law
- c. Property 7 of quotients and distributive law
- d. Property 6 of quotients and distributive law
- e. Property 3 of quotients and distributive law

ANS: C PTS: 1

18. True or False?

$$p + q = q + p, p \neq 0, q \neq 0$$

- a. True
- b. False

ANS: A PTS: 1

19. True or False?

$$(p - q) - r = p - (q - r), p \neq 0, q \neq 0, r \neq 0$$

- a. False
- b. True

ANS: A PTS: 1

MULTIPLE RESPONSE

1. Classify the number as to type.

$$-387$$

- a. natural
- b. integer
- c. rational
- d. real
- e. irrational

ANS: B, C, D PTS: 1

2. Classify the number as to type.

$$\frac{8}{23}$$

- a. natural
- b. irrational
- c. rational
- d. real
- e. integer

ANS: C, D PTS: 1

3. Classify the number as to type.

$$\frac{1}{\pi}$$

- a. integer
- b. real
- c. natural
- d. irrational
- e. rational

ANS: B, D PTS: 1

4. Classify the number as to type.

$\overline{1.021}$

- a. irrational
- b. integer
- c. real
- d. rational
- e. natural

ANS: C, D PTS: 1

5. Classify the number as to type.

5.82706...

- a. natural
- b. real
- c. irrational
- d. rational
- e. integer

ANS: B, C PTS: 1

6. State the real number property that justifies the statement.

$$\frac{x + 2y}{3x + 2x} \div \frac{x}{6x + 4x} = \frac{x + 2y}{3x + 2x} \cdot \frac{2(3x + 2x)}{x} = \frac{2(x + 2y)}{x}$$

- a. Property 1 of quotients
- b. Property 4 of quotients
- c. Property 2 of quotients
- d. Property 5 of quotients
- e. Property 3 of quotients

ANS: C, D PTS: 1

SHORT ANSWER

1. Classify the number as to type.

-88

ANS:
integer, rational, real

PTS: 1

2. Classify the number as to type.

$$\frac{19}{34}$$

ANS:
rational, real

PTS: 1

3. True or False?

Every integer is a whole number.

ANS:
False

PTS: 1