1.) Can we write 0 in the form of p/q?

a. Yes

b. No

c. Cannot be explained

d. None of the above

Answer: a

Explanation: 0 is a rational number and hence it can be written in the form of p/q.

Example: 0/4 = 0

2.) The three rational numbers between 3 and 4 are:

a. 5/2, 6/2, 7/2

b. 13/4, 14/4, 15/4

c. 12/7, 13/7, 14/7

d.11/4, 12/4, 13/4

Answer: b

Explanation: There are many rational numbers between 3 and 4

To find 3 rational numbers, we need to multiply and divide both the numbers by 3+1 = 4

Hence, 3 x (4/4) = 12/4 and 4 x (4/4) = 16/4

Thus, three rational numbers between 12/4 and 16/4 are 13/4, 14/4 and 15/4.

3.) In between any two numbers, there are:

a. Only one rational number

b. Two rational numbers

c. Infinite rational numbers

d. No rational number

Answer: c

Explanation: Take the reference from question number 2 explained above.

4.) Every rational number is:

a. Whole number

b. Natural number

c. Integer

d. Real number

Answer: d

5.) √9 is _____ number.

a. A rational

b. An irrational

c. Neither rational nor irrational

d. None of the above

Answer: a

Explanation: √9 = 3

Hence, √9 is a rational number.

6.) Which of the following is an irrational number?

a. √16

b. √(12/3)

c. √12

d. √100

Answer: c

Explanation: √12 cannot be simplified to a rational number.

7.) 3√6 + 4√6 is equal to:

a. 6√6

b. 7√6

c. 4√12

d. 7√12

Answer: b

Explanation: 3√6 + 4√6 = (3 + 4)√6 = 7√6

8.) √6 x √27 is equal to:

a. 9√2

b. 3√3

c. 2√2

d. 9√3

Answer: a

Explanation: √6 x √27 = √(6 x 27) = √(2 x 3 x 3 x 3 x 3) = (3 x 3)√2 = 9√2

9.) Which of the following is equal to x^3?

a. $x^6 – x^3$

b. $x^6.x^3$

c. x^6/x^3

d. $(x^6)^3$

Answer: c

Explanation: $x^6/x^3 = x^{6-3} = x^3$

10.) Which of the following is an irrational number?

a. √23

b. √225

c. 0.3796

d. 7.478478

Answer: a

Explanation: √23 = 4.79583152331…

Since the decimal expansion of the number is non-terminating non-recurring. Hence, it is an irrational number.

11. Write three rational numbers between 4 and 5?

a. 12 / 6, 13 / 6, 14 / 6

b. 12 / 7, 13 / 7, 14 / 7

c. 17 / 4, 18 / 4, 19 / 4

d. 17 / 2, 18 / 13, 19 / 23

Solution:

There are several rational numbers between 4 and 5.

The numbers are between 16/4 and 20/4.

Therefore, the answer is c, that is, 17 / 4, 18 / 4, 19 / 4.

12. 4√6 + 7√6 is equal to:

a. 10√6

b. 11√6

c. 4√12

d. 8√12

Solution:

The answer is b.

$4\sqrt{6} + 7\sqrt{6} = (4 + 7)\sqrt{6} = 11\sqrt{6}$.

13. $\sqrt{6} \times \sqrt{36}$ is equal to:

a. $6\sqrt{6}$

b. $8\sqrt{6}$

c. $2\sqrt{2}$

d. $3\sqrt{3}$

Solution:

The answer is a.

$\sqrt{6} \times \sqrt{36} = \sqrt{(6 \times 36)} = \sqrt{(2 \times 3 \times 3 \times 3 \times 2 \times 2)} = (3 \times 2)\sqrt{(3 \times 2)} = 6\sqrt{6}$

14. Which of the following is equal to x^3?

a. $x^8 - x^5$

b. $x^8.x^5$

c. x^7/x^4

d. $(x^8)^3$

The answer is c.

Since, $x^7/x^4 = x^{7-4} = x^3$

15. $(-7 + 4\sqrt{7} - 3\sqrt{7})$ is

a. A positive number which is rational.

b. A number which is irrational.

c. A negative number which is rational.

d. A number equal to zero.

Solution:

The answer to the problem is -7 + √7, which is an irrational number.

16. (√12 + √10 - √2) is

a. A positive number which is rational.

b. A number equal to zero.

c. A number which is irrational.

d. an integer which is negative.

Solution:

c.

The answer is a number, which is an irrational number.

17. A rational number is given as -6 / 8. This rational number can also be known as

a. A natural number.

b. A whole number.

c. A fraction.

d. A real number.

Solution:

d.

The rational number can also be said to be a real number.