



Tenth Grade - Real Number System

1) Evaluate the following with rational exponents

$$(8)^{2/3}$$

- 4
- 1
- 2
- 6

2) Evaluate the following with rational exponents

$$(27)^{-2/3}$$

- $1/9$
- $1/7$
- $1/4$
- $2/3$

3) Evaluate the following with rational exponents

$$(100)^{3/2}$$

- 2000
- 5000
- 4000
- 1000

4) Evaluate the following with rational exponents

$$(9)^{3/2}$$

- 21



- 27
- 17
- 15

5) Evaluate the following with rational exponents

$$(16)^{-5/4}$$

- 3/16
- 1/21
- 1/32
- 2/23

6) Evaluate the following with rational exponents

$$(x^2)^{1/2}$$

- x/6
- 4/9
- x
- 3/8

7) Evaluate the following with rational exponents

$$(64a^6)^{1/6}$$

- 4a
- 6a
- 2a
- 5a

8) Evaluate $(y^{12})^{1/2}$ with rational exponents



- $y/8$
- $y/3$
- y^2
- y^3

9) Evaluate $(a?)^{1/4}$ with rational exponents

- $a/8$
- a^2
- $2a$
- $a/3$

10) Solve: $(4)? \times (4)^2$

- 64
- 56
- 42
- 36

11) Solve the following using the properties of exponents

$$(x)^y \div (x)^z$$

a. $(x)^{x/w}$ b. $(x)^{x/z}$ c. $(x)^{z/x}$ d. $(x)^{y-z}$

- d
- b
- c
- a

12) Solve the following using the properties of exponents



$$(8)^x \div (8)^y$$

a) $(8)^{z-y}$ b) $(8)^{z-x}$ c) $(8)^{x-y}$ d) $(8)^{x-x}$

- a
- d
- b
- c

13) Solve the following using the properties of exponents

$$(4^{3/2})^2$$

- 23
- 87
- 65
- 64

14) Solve the following using the properties of exponents

$$(1/2^5)^{1/4}$$

(a) $(1/2)^{5/3}$ (b) $(1/2)^{5/4}$ (c) $(1/2)^{4/3}$ (d) $(1/2)^{3/4}$

- b
- b
- d
- c

15) Solve the following using the properties of exponents

$$(y^a)^{b/4}$$

a) $(y^{ab/4})$ b) (y^{3a}) c) $(y^{3a/2})$ d) $(y^{3a/3})$



- a
- b
- c
- d

16) Solve the following using the properties of exponents

$$(12^{1/3} / 4^{1/3})^{-2}$$

(a) $(1/3)^{2/3}$ (b) $(1/5)^{3/2}$ (c) $(1/6)^{5/9}$ (d) $(2/9)^{2/3}$

- a
- d
- b
- c

17) Solve the following using the properties of exponents

$$(x)^{-1/2} / (y)^{-1/3}$$

(a) $(y)^{1/3} / (x)^{1/2}$ (b) $(y)^{2/3}$ (c) $(x)^{1/2}$ (d) $(x)^{1/3} / (y)^{1/2}$

- d
- b
- c
- a

18) Solve the following using the properties of exponents

$$(7)^{-x} / (8)^{-y}$$

a) $(5)^y / (3)^x$ b) $(4)^y / (3)^x$ c) $(9)^y / (7)^x$ d) $(8)^y / (7)^x$

- c
- d
- b



- a

19) Solve the following using properties of exponents

$$(8)^{-mx} / (6)^{-ny}$$

a) $8/6$ b) $7/6$ c) $3/6$ d) $(6)^{ny} / (8)^{mx}$

- d
- b
- a
- c

20) Solve the following using properties of exponents

$$(x/z)^{1/5}$$

(a) $(x)^{1/5} / (z)^{1/5}$ (b) $(x)^{2/5} / (z)^{3/5}$ (c) $(x)^2 / (z)^4$ (d) $(x)^{1/2} / (z)^4$

- d
- c
- b
- a

21) Simplify the radicals using given operation

$$\sqrt[3]{16} - \sqrt[3]{2}$$

(a) $\sqrt[4]{2}$ (b) $\sqrt[4]{13}$ (c) $\sqrt[4]{6}$ (d) $\sqrt[3]{2}$

- c
- a
- b
- d



22) Simplify the radicals using given operations

$$3\sqrt[5]{y} + 6\sqrt[5]{y}$$

(a) $9\sqrt[5]{y}$ (b) $2\sqrt[5]{3y}$ (c) $6\sqrt[5]{6y}$ (d) $3\sqrt[5]{2y}$

- a
- d
- b
- c

23) Simplify the radicals using given operations

$$6\sqrt[3]{y} - 11\sqrt[3]{y}$$

(a) $-3\sqrt[6]{2y}$ (b) $2\sqrt[3]{3y}$ (c) $-5\sqrt[3]{y}$ (d) $7\sqrt[3]{2y}$

- a
- c
- b
- d

24) Simplify the radicals using given operations

$$2x\sqrt[3]{y} - 7x\sqrt[3]{y}$$

(a) $-5x\sqrt[3]{y}$ (b) $-6x\sqrt[3]{2y}$ (c) $5x\sqrt[4]{y^2}$ (d) $6x\sqrt[4]{2y^2}$

- c
- a
- a
- b



25) Simplify the radicals using given operations

$$3x\sqrt[3]{5x^5} - 2x\sqrt[3]{5x^5}$$

(a) $x\sqrt[3]{5x^5}$ (b) $2x\sqrt[4]{4x^6}$ (c) $-2x\sqrt[3]{7x^6}$ (d) $4x\sqrt[3]{6x^9}$

- b
- c
- a
- d

26) Simplify the radicals using given operations

$$7\sqrt[5]{6} + 2\sqrt[5]{6}$$

(a) $9\sqrt[5]{6}$ (b) $9\sqrt[5]{5}$ (c) $9\sqrt[5]{4}$ (d) $9\sqrt[4]{7}$

- a
- d
- c
- b

27) Simplify the radicals using given operations

$$\sqrt[3]{2} + 5\sqrt[3]{2}$$

(a) $6\sqrt[3]{2}$ (b) $5\sqrt[3]{3}$ (c) $4\sqrt[3]{4}$ (d) $9\sqrt[3]{2}$

- d
- c
- a
- b

28) Simplify the radicals using given operations



$$10\sqrt{2} - 2\sqrt{2} + 4\sqrt{32}$$

(a) $2\sqrt{2}$ (b) $2\sqrt{3}$ (c) $23\sqrt{6}$ (d) $24\sqrt{2}$

- d
- c
- b
- a

29) Simplify the radicals using given operations

$$\sqrt{48} - 3\sqrt{72} - \sqrt{27} + 5\sqrt{18}$$

(a) $\sqrt{6}-6\sqrt{2}$ (b) $\sqrt{2}-3\sqrt{3}$ (c) $\sqrt{3}-3\sqrt{2}$ (d) $\sqrt{4}-3\sqrt{6}$

- a
- b
- c
- d

30) Simplify the radicals using given operations

$$\sqrt{5} / 2 - 10 / \sqrt{5} + \sqrt{125}$$

- 2.876
- 5.211
- 4.216
- 7.826