Tenth Grade - Real Number System

1) Evaluate the following with rational exponents

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

- 6
- 1
- 2
- 4

2) Evaluate the following with rational exponents

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

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

3) Evaluate the following with rational exponents

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

- 5000
- 2000
- 4000
- 1000

4) Evaluate the following with rational exponents

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

- 17

- 15
- 27
- 21

5) Evaluate the following with rational exponents

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

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

6) Evaluate the following with rational exponents

$$\left(x^{2}\right)^{1/2}$$

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

7) Evaluate the following with rational exponents

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

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

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

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

9) Evaluate (a?)¼ with rational exponents

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

10) Solve: (4)? × $(4)^2$

- 64
- 36
- 56
- 42

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. $(x)^{y-z}$

- b
- a
- c
- d

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) $(8)^{x-x}$

- b
- c
- a
- d

13) Solve the following using the properties of exponents

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

- 87
- 23
- 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) $(1/2)^{3/4}$

- c
- b
- b
- d

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) $(y^{3a/3})$

- b
- d
- a
- c

16) Solve the following using the properties of exponents

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

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

- a
- b
- c
- d

17) Solve the following using the properties of exponents

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

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

- c
- a
- b
- d

18) Solve the following using the properties of exponents

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

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

- d
- a
- b

- c

19) Solve the following using properties of exponents

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

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

- b
- a
- c
- d

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) $(x)^{1/2}/(z)^{4}$

- b
- a
- d
- c

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) $\sqrt[3]{2}$

- a
- d
- b
- c

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) $3\sqrt[5]{2y}$

- d
- a
- 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) $7\sqrt[3]{2y}$

- b
- a
- d
- c

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) $6x\sqrt[4]{2y^2}$

- b
- a
- a
- c

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) $4x\sqrt[3]{6x^9}$

- c
- d
- a
- b

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) $9\sqrt[4]{7}$

- c
- d
- b
- a

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) $9\sqrt[3]{2}$

- c
- b
- d
- a

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
- a
- c
- b

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
- c
- b
- d

30) Simplify the radicals using given operations

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

- 2.876
- 5.211
- 4.216
- 7.826