

N.RN.A.2: Radicals and Rational Exponents 3

- 1 The value of $(-64)^{\frac{2}{3}}$ is
 1) 16 2) -16 3) $-\frac{1}{16}$ 4) 512

- 2 The value of $\left(\frac{8}{27}\right)^{-\frac{2}{3}}$ is
 1) $\frac{4}{9}$ 2) $-\frac{4}{9}$ 3) $-\frac{2}{3}$ 4) $\frac{9}{4}$

- 3 Find the value of $27^{\frac{4}{3}}$.

- 4 Find the value of $(-8)^{\frac{2}{3}}$.

- 5 Evaluate: $-3x^0 + (8)^{\frac{2}{3}} + \left(\frac{1}{2}\right)^{-2}$

- 6 If $f(x) = 4x^{\frac{1}{2}}$, find $f(4)$.

- 7 If $f(x) = x^{\frac{2}{3}}$, find $f(-27)$.

- 8 If $f(x) = x^{\frac{3}{4}}$, find $f(16)$.

- 9 If $f(x) = x^{-\frac{1}{2}}$, find $f(9)$.

- 10 If $g(x) = x^{-\frac{3}{2}}$, find $g(4)$.

- 11 If $f(x) = x^{-\frac{1}{3}}$, what is $f(64)$?
 1) $\frac{1}{4}$ 2) -8 3) -4 4) 4

- 12 What is the value of the expression $2x^{-\frac{1}{3}}$ when $x = 8$?
 1) 1 2) 2 3) $\frac{1}{2}$ 4) $\frac{1}{4}$

- 13 If $f(x) = x^{-\frac{3}{2}}$, find $f\left(\frac{16}{9}\right)$.

- 14 If $f(x) = \left(x^0 + x^{\frac{1}{2}}\right)^{-2}$, find $f(9)$.

15 Find the value of the expression $2x^0 + x^{\frac{1}{3}}$ when $x = 125$.

16 Express in *simplest form* the value of $2x^0 + x^{\frac{2}{3}}$ if $x = 27$.

17 Find the value of $2p^0 - p^{\frac{2}{3}}$ if $p = 8$.

18 If $f(x) = (16x)^0 + x^{\frac{2}{3}}$, find $f(64)$.

19 If $f(x) = x^{\frac{1}{2}} + x^{-2}$, what is the value of $f(4)$?

20 If $x = 4$, the value of $4x^{\frac{1}{2}} + (x^0 + 3)^{-1}$ is
 1) $\frac{11}{28}$ 2) $4\frac{1}{3}$ 3) $8\frac{1}{7}$ 4) $8\frac{1}{4}$

21 If $a = 4$, evaluate $a^{\frac{1}{2}} + a^0 + a^{-2}$.

22 If $f(x) = x^0 + x^{\frac{1}{2}} + x^{-1}$, find $f(4)$.

23 What is the value of $3a^0 + a^{\frac{1}{2}} + 8a^{-2}$ when $a = 4$?

24 Find the value of $5x^0 + x^{-\frac{1}{2}} - x^{\frac{1}{2}}$ when $x = 16$.

25 If $f(x) = x^0 + x^{\frac{2}{3}} + x^{-\frac{2}{3}}$, find $f(8)$.

26 If $f(x) = 3x^2 + 3x^{\frac{1}{2}} + 3x$, then $f(-9)$ is equal to
 1) $-270 + 9i$ 2) $216 + 9i$ 3) $246\frac{1}{27}$
 4) $216\frac{1}{27}$

27 If $g(x) = 36^x$, evaluate $g\left(-\frac{1}{2}\right)$.

28 If $g(x) = \left(\frac{1}{64}\right)^x$, find $g\left(-\frac{1}{3}\right)$.

29 If $f(x) = x^{-2} + 27^x$, find $f\left(\frac{2}{3}\right)$ in simplest form.

30 If $10^{3.5551} = 3590$, find the value of $10^{0.5551}$.

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Answer Section

1 ANS: 1 REF: 019520siii

2 ANS: 4 REF: 018922siii

3 ANS:
81

REF: 010203siii

4 ANS:
4

REF: 088511siii

5 ANS:
5

REF: 069911siii

6 ANS:
8

REF: 068101siii

7 ANS:
9

REF: 068002siii

8 ANS:
8

REF: 089004siii

9 ANS:
 $\frac{1}{3}$

REF: 069007siii

10 ANS:
 $\frac{1}{8}$

REF: 068611siii

11 ANS: 1 REF: 080116siii

12 ANS: 1 REF: 060132siii

13 ANS:
 $\frac{27}{64}$

REF: 010310siii

14 ANS:

$$\frac{1}{16}$$

REF: 069416siii

15 ANS:

7

REF: 080306siii

16 ANS:

11

REF: 018609siii

17 ANS:

-2

REF: 088614siii

18 ANS:

17

REF: 019807siii

19 ANS:

$$2\frac{1}{16}$$

REF: 089705siii

20 ANS: 4

REF: 019418siii

21 ANS:

$$3\frac{1}{16}$$

REF: 089810siii

22 ANS:

$$3\frac{1}{4}$$

REF: 089901siii

23 ANS:

5.5

REF: 010407siii

24 ANS:

$$\frac{5}{4}$$

REF: 010013siii

25 ANS:

$$5\frac{1}{4}$$

REF: 069711siii

26 ANS: 2

REF: 089431siii

27 ANS:

$$\frac{1}{6}$$

REF: 060010siii

28 ANS:

$$4$$

REF: 060204siii

29 ANS:

$$11\frac{1}{4}$$

REF: 080206siii

30 ANS:

3.59

REF: 068614siii