N.RN.A.2: Radicals and Rational Exponents 5

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:
  $\dfrac{1}{3}$

  REF: 069007siii
10 ANS:
  $\dfrac{1}{8}$

  REF: 068611siii
11 ANS: 1   REF: 080116siii
12 ANS: 1   REF: 060132siii
13 ANS:
  $\dfrac{27}{64}$

  REF: 010310siii

14 ANS:

$\dfrac{1}{16}$

REF: 069416siii

15 ANS:

7

REF: 080306siii

16 ANS:

11

REF: 018609siii

17 ANS:

−2

REF: 088614siii

18 ANS:

17

REF: 019807siii

19 ANS:

$2\dfrac{1}{16}$

REF: 089705siii

20 ANS: 4 REF: 019418siii

21 ANS:

$3\dfrac{1}{16}$

REF: 089810siii

22 ANS:

$3\dfrac{1}{4}$

REF: 089901siii

23 ANS:

5.5

REF: 010407siii

24 ANS:

$\dfrac{5}{4}$

REF: 010013siii

25 ANS:

$5\dfrac{1}{4}$

REF: 069711siii

26 ANS: 2   REF: 089431siii

27 ANS:

$\dfrac{1}{6}$

REF: 060010siii

28 ANS:

4

REF: 060204siii

29 ANS:

$11\dfrac{1}{4}$

REF: 080206siii

30 ANS:

3.59

REF: 068614siii