Drill 2

Answers can be found in Part IV.

a. $3^3 \times 3^2 =$ _____

b. $\frac{3^3}{3^2} =$ _____

c. $\left(3^3\right)^2 =$ _____

d. $x^6 \times x^2 =$ _____

e. $\frac{x^6}{x^2} =$ _____

f. $\left(x^6\right)^2 =$ _____

g. $\sqrt{8} =$ _____

h. $\sqrt[3]{-64} =$ _____

i. $\sqrt{12} + 5\sqrt{3} =$ _____

j. $\sqrt{y^3} =$ _____

k. $\sqrt[3]{-y^3} =$ _____

l. $\sqrt{x^2 y} + 5x\sqrt{y} =$ _____

3

If $3^4 = 9^x$, what is the value of x ?

A) 2

B) 3

C) 4

D) 5

5

If $\left(3^x\right)^3 = 3^{15}$, what is the value of x ?

A) 3

B) 5

C) 7

D) 9

7

If $\sqrt{s} - 3 = 9$, which of the following is a possible value of s?

A) 12

B) 36

C) 81

D) 144

8

Which of the following is equivalent to the expression $x^6 y^{-3} z^{\frac{1}{2}}$?

A) $\frac{x^6\sqrt{z}}{3y}$

B) $\frac{x^6\sqrt{2z}}{y^3}$

C) $\frac{6x\sqrt{z}}{y^3}$

D) $\frac{x^6\sqrt{z}}{y^3}$

12

The function $f(x) = k^{0.3x}$, where k is a constant, can also be expressed as $f(x) = k^{\frac{Bx}{9}}$ for what value of B?

A) 2.7

B) 9.3

C) 27

D) 30

6

$$\sqrt{m^2 + 39} = 8$$

In the equation above, what is a possible value of m ?

A) 3

B) 4

C) 5

D) 6

8

If $x^y x^6 = x^{54}$ and $\left(x^3\right)^z = x^9$, what is the value of $y + z$?

A) 11

B) 12

C) 48

D) 51

9

Which of the following expressions is equivalent to $\sqrt[4]{81b^3c}$?

A) $3b^{\frac{3}{4}}c^{\frac{1}{4}}$

B) $3b^3c$

C) $20.25b^{\frac{3}{4}}c^{\frac{1}{4}}$

D) $20.25b^3c$

10

If $x^{\frac{5}{2}} = 8x$, which of the following could be the value of x ?

A) 2

B) 4

C) 6

D) 8

11

Which of the following expressions is equivalent to $\left(3m^2n^{-3}\right)^{\frac{2}{3}}$?

A) $2m^{\frac{4}{3}}n^{-2}$

B) $\sqrt[3]{9}m^{\frac{4}{3}}n^{-2}$

C) $3m^{\frac{4}{3}}n^{-2}$

D) $3m^4n^{-6}$

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$$b\sqrt[3]{64a^{\frac{b}{2}}} = \left(4\sqrt{3}a\right)^2$$

Which of the following values of b makes the equation above true?

A) 4

B) 6

C) 8

D) 12

23

Which of the following shows the expression $\frac{9 \cdot 8^y}{5 \cdot 16^{y+\frac{1}{2}}}$ in the form of $A \cdot (B)^y$?

A) $\frac{9}{20} \cdot \left(\frac{1}{2}\right)^y$

B) $\frac{9}{10} \cdot (1)^{\frac{y}{2}}$

C) $\frac{9}{5} \cdot \left(\frac{1}{2}\right)^{\frac{y}{2}}$

D) $\frac{9}{5} \cdot \left(\frac{1}{2}\right)^y$