

Drill 2

Answers can be found in Part IV.

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

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

c. $(3^3)^2 =$ _____

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

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

f. $(x^6)^2 =$ _____

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



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

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

- A) 3
- B) 5
- C) 7
- D) 9



8

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

- A) 11
- B) 12
- C) 48
- D) 51

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



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) $20.25b^3c$

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



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) $\sqrt[3]{9m^{\frac{4}{3}}n^{-2}}$
- C) $3m^{\frac{4}{3}}n^{-2}$
- D) $3m^4n^{-6}$



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

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