

Lesson "3": Exponents and Radicals

1) If $a^{\frac{-1}{2}} = 3$, what is the value of a ?

a) -9

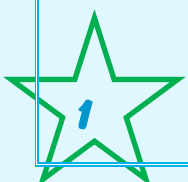
b) $\frac{1}{9}$

c) $\frac{1}{3}$

d) 9



SAT



2) Let $n = 1^2 + 1^4 + 1^6 + 1^8 + \dots + 1^{50}$, what is the value of n ?



a) 10 b) 20

c) 25 d) 30

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3) If $4^{2n+3} = 8^{n+5}$, what is the value of n ?

a) 6

b) 7

c) 8

d) 9

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4) If $\frac{2^x}{2^y} = 2^3$, then x must equal _____

a) $y + 3$

b) $y - 3$

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c) $3 - y$

d) $3y$



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5) If $3^x = 10$, what is the value of 3^{x-3} ?

a) $\frac{10}{3}$

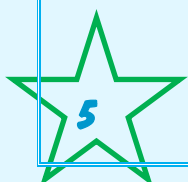
b) $\frac{10}{9}$

c) $\frac{10}{27}$

d) $\frac{27}{10}$



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6) If $x^2y^3 = 10$ and $x^3y^2 = 8$, what is the value of x^5y^5 ?

a) 18

b) 20

c) 40

d) 80

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7) If a and b are positive even integers, which of the following is greatest?



a) $(-2a)^b$

b) $(-2a)^{2b}$

c) $(2a)^b$

d) $2a^{2b}$

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8) Which of the following is equivalent to $x^{\frac{2a}{b}}$, for all values of x ?



a) $\sqrt[b]{ax^2}$

b) $\sqrt[b]{x^{2a}}$

c) $\sqrt[b]{x^{a+2}}$

d) $\sqrt[2a]{x^b}$

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9) If $x^2 = y^3$, for what value of z does $x^{3z} = y^9$?

a) -1

b) 0

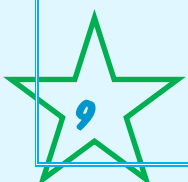
c) 1

d) 2

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10) If $2^{x+3} - 2^x = k(2^x)$, what is the value of k ?

a) 3

b) 5

c) 7

d) 8

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11) If $\sqrt{x}\sqrt{x} = x^a$, then what is the value of a ?

a) $\frac{1}{2}$

b) $\frac{3}{4}$

c) 1

d) $\frac{4}{3}$



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12) If $2\sqrt{x+2} = 3\sqrt{2}$, if $x > 0$ in the equation,
what is the value of x ?

a) 2.5

b) 3

c) 3.5

d) 4

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13) If $x^{ac} \cdot x^{bc} = x^{30}$, $x > 1$ and $a + b = 5$, what is the value of c ?



a) 3

b) 5

c) 6

d) 10

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14) If $n^3 = x$ and $n^4 = 20x$, where $n > 0$, what is the value of x ? (Ans: 8000)



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15) If $x^8y^7 = 333$ and $x^7y^6 = 3$, what is the value of xy ?
(Ans: 111)



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