

Do Elephants Know How to Gamble?



Simplify each expression below. Assume that all variables represent nonnegative numbers. Find your answer in the corresponding set of answer boxes. Print the letter of the exercise in the box above the answer.

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|---|---|---|---|
| (T) $\sqrt{9x^2} = \sqrt{3 \cdot 3 \cdot x \cdot x} = 3x$ | (H) $\sqrt{12x^2}$ | (E) $-\sqrt{28x^4} = -\sqrt{2 \cdot 2 \cdot 7 \cdot x \cdot x \cdot x \cdot x} = -2x^2\sqrt{7}$ | (D) $\sqrt{7x^2y}$ |
| (E) $-\sqrt{49x^2}$ | (O) $-\sqrt{45x^2} = -\sqrt{5 \cdot 3 \cdot x \cdot x} = -3x\sqrt{5}$ | (Y) $\sqrt{16xy^2}$ | (H) $\sqrt{9x^2y^4} = \sqrt{3 \cdot x \cdot x \cdot y \cdot y \cdot y \cdot y} = 3xy^2$ |
| (A) $\sqrt{4x^2y^2} = \sqrt{2 \cdot 2 \cdot x \cdot x \cdot y \cdot y} = 2xy$ | (T) $\sqrt{25y^4}$ | (V) $-\sqrt{20xy^2} = -\sqrt{2 \cdot 2 \cdot 5 \cdot x \cdot y \cdot y} = -2y\sqrt{5x}$ | (N) $\sqrt{24x^4y^2}$ |

T	H	E	Y	D	O	N	T	H	A	V	E		
$5y^2$	$2x\sqrt{3}$	$-7x$	$4y\sqrt{x}$	$2xy\sqrt{6y}$	$x\sqrt{7y}$	$-3x\sqrt{5}$	$2x^2y\sqrt{6}$	$3x$	$3x^2y^3$	$3xy^2$	$2xy$	$-2y\sqrt{5x}$	$-2x^2\sqrt{7}$

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|---|--|--|---------------------------|
| (E) $\sqrt{a^3} = \sqrt{a \cdot a \cdot a} = a\sqrt{a}$ | (E) $\sqrt{75a^2b^3}$ | (S) $\sqrt{18a^6b^2} = \sqrt{2 \cdot 3 \cdot 3 \cdot a \cdot a \cdot a \cdot a \cdot a \cdot a \cdot b \cdot b} = 3a^3b\sqrt{2}$ | (V) $2\sqrt{50ab^5}$ |
| (T) $-\sqrt{40a^3}$ | (I) $\sqrt{144b^6} = \sqrt{12 \cdot 12 \cdot b \cdot b \cdot b \cdot b \cdot b \cdot b} = 12b^3$ | (H) $\sqrt{15a^8b^3} = \sqrt{3 \cdot 5 \cdot a \cdot a \cdot a \cdot a \cdot a \cdot a \cdot a \cdot a \cdot b \cdot b \cdot b} = 3a^4b\sqrt{5}$ | (D) $8\sqrt{300a^4b^6}$ |
| (A) $\sqrt{54a^3b^2} = \sqrt{2 \cdot 3 \cdot 3 \cdot 3 \cdot a \cdot a \cdot a \cdot b \cdot b} = 3ab\sqrt{6a}$ | (E) $-\sqrt{1000a^6} = -\sqrt{10 \cdot 10 \cdot 10 \cdot a \cdot a \cdot a \cdot a \cdot a \cdot a} = -10a^3\sqrt{10}$ | (A) $\sqrt{a^5b^8} = \sqrt{a \cdot a \cdot a \cdot a \cdot a \cdot b \cdot b \cdot b \cdot b \cdot b \cdot b \cdot b \cdot b} = a^2b^4\sqrt{a}$ | (G) $5\sqrt{98a^{20}b^3}$ |

T	H	E	V	E	G	A	S	I	D	E	A		
$-2a\sqrt{10a}$	$a^4b\sqrt{15b}$	$-10a^3\sqrt{10}$	$40ab^3\sqrt{3}$	$10b^2\sqrt{2ab}$	$a\sqrt{a}$	$35a^{10}b\sqrt{2b}$	$3ab\sqrt{6a}$	$3a^3b\sqrt{2}$	$a^2b^2\sqrt{5}$	$12b^3$	$80a^2b^3\sqrt{3}$	$5ab\sqrt{3b}$	$a^2b^4\sqrt{a}$

(D) $8\sqrt{2 \cdot 2 \cdot 3 \cdot 5 \cdot a \cdot a \cdot a \cdot a \cdot a \cdot a \cdot b \cdot b \cdot b} = 8 \cdot 2 \cdot 3 \cdot 5 \cdot a^3 \cdot b \cdot \sqrt{3} = 80a^3b\sqrt{3}$

Unit 1-3 Review

Date _____ Period _____

Solve each equation.

To solve an equation you isolate the variable using inverse operations.

1) $-12 = -5x + 2x$
 $-12 = -3x$
 $\frac{-12}{-3} = \frac{-3x}{-3}$
 $x = 4$

2) $-198 = -6(4b + 5)$
 $x = 7$

3) $15 + v = 1 + 8v$
 $15 = 1 + 7v$
 $\frac{14}{7} = \frac{7v}{7}$
 $v = 2$

4) $5(7b + 7) = 35 + 2b$
 $B = 0$

Simplify each expression. Add/Subt: Coefficients of like terms

5) $(2x^3 + x) + (5x^3 + 3x)$
 $2x^3 + x + 5x^3 + 3x$
 $7x^3 + 4x$

6) $(8n^4 - 8n^2) - (3n^2 - 3n^4)$
 $11n^4 - 11n^2$

Find each product. Multiply like bases you add exponents.

7) $8n^4(4n^2 + 8n + 7)$
 $32n^6 + 64n^5 + 56n^4$

8) $(3m + 5)(3m - 6)$
 $9m^2 - 3m - 30$

Factor each completely.

Factor: First always factor out GCF when possible!
 Multiply to get front, multiply to get back, add or subtract to get middle.

9) $n^2 + 6n - 16$
 $(n - 2)(n + 8)$

10) $3m^2 - 6m + 3$ GCF = 3
 $3(m - 1)(m - 1)$

11) $30m^2 - 48m$ GCF = 6m
 $6m(5m - 8)$

12) $25v^2 - 120v - 180$ GCF = 5
 $5(5v + 6)(v - 6)$

13) $2n^2 - 11n - 40$ GCF = none
 $(2n + 5)(n - 8)$

14) $x^2 - 5x + 6$
 $(x - 2)(x - 3)$

15) $p^2 - 49$
 $(p - 7)(p + 7)$

16) $3x^2 - 27$ GCF = 3
 $3(x - 3)(x + 3)$

Solve each system by any method.

17) $\begin{cases} 2x + y = 4 \\ x + 3y = -3 \end{cases}$
 $-6x - 3y = -12$
 $-5x = -15$
 $x = 3$
 $x + 3y = -3$
 $3 + 3y = -3$
 $3y = -6$
 $y = -2$
 $(3, -2)$

18) $\begin{cases} y = -2x + 19 \\ 4x + 2y = 38 \end{cases}$
 Infinite Solutions