

# Distributing Exponents Worksheet

Algebra

Grades 6 to 8

#### Distributing Exponents Worksheet | Grades 6 to 8

## **Skill Questions**

Name: ......

Date: .....

1 Simplify:  $2x^2(3x^3)$ 



2 Evaluate:  $(-2)^3(-2)^4$ 



3 Simplify:  $4a^2b^3(2ab^2)$ 



**4** Evaluate:  $(-3)^2 \bullet (-3)^3$ 



Simplify:  $(2x^3y^7)^3$ 



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6 Evaluate:  $(4a)^3(2a)^2$ 

Answer

7 Simplify:  $(6a^4b^5c)^2$ 



8 Evaluate  $(-2)^4 \cdot 3^4$ 



9 Simplify:  $(3x^3y^5)^3(x^6y)$ 

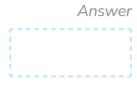


**10** Evaluate  $(-5)^2 \bullet (-5)^3$ 

Answer

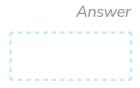
### **Applied Questions**

11 A farmer has a rectangular field with dimensions  $3x^2$  meters by 4x meters. What is the total area of the field?



12 Simplify the expression:

$$(3ab)^2(5a^2)(2a^3b^4)^3$$



Write an expression representing the area of square that has side lengths,  $10x^2y$ 

Answer

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14	A garden has rows of plants, with each row containing $6a$ flowers. If there are $3a^2$ rows, write an expression that represents the total amount of flowers.
	Answer
15	A manufacturer produces $4z$ units of a product each day. If the production continues for $5z^2$ days, write an expression representing the total amount of products.
	Answer

#### **Answers**

Question number	Question	Answers	Standard
1	Simplify: $2x^2(3x^3)$	$6x^5$	8.EE.A.1
2	Evaluate: $(-2)^3(-2)^4$	-128	8.EE.A.1
3	Simplify: $4a^2b^3(2ab^2)$	$8a^3b^5$	8.EE.A.1
4	Evaluate: $(-3)^2 \bullet (-3)^3$	-243	8.EE.A.1
5	Simplify: $(2x^3y^7)^3$	$8x^9y^{21}$	8.EE.A.1
6	Evaluate: $(4a)^3(2a)^2$	$256a^5$	8.EE.A.1
7	Simplify: $(6a^4b^5c)^2$	$36a^8b^{10}c^2$	8.EE.A.1
8	Evaluate $(-2)^4 \bullet 3^4$	1,296	8.EE.A.1
9	Simplify: $(3x^3y^5)^3(x^6y)$	$27x^{15}y^{16}$	8.EE.A.1
10	Evaluate $(-5)^2 \bullet (-5)^3$	-3125	8.EE.A.1
11	A farmer has a rectangular field with dimensions $3x^2$ meters by $4x$ meters. What is the total area of the field?	$3x^2 ullet 4x = 12x^3$ square meters	8.EE.A.1
12	Simplify the expression: $(3ab)^2(5a^2)(2a^3b^4)^3$	$360a^{13}b^{14}$	8.EE.A.1
13	Write an expression representing the area of square that has side lengths, $10x^2y$	$egin{aligned} Area &= 10x^2y ullet 10x^2y \ Area &= 100x^4y^2 \ units^2 \end{aligned}$	8.EE.A.1

#### Distributing Exponents Worksheet | Grades 6 to 8 | Answers

Question number	Question	Answers	Standard
14	A garden has rows of plants, with each row containing $6a$ flowers. If there are $3a^2$ rows, write an expression that represents the total amount of flowers.	$6a imes3a^2=18a^3$ flowers	8.EE.A.1
15	A manufacturer produces $4z$ units of a product each day. If the production continues for $5z^2$ days, write an expression representing the total amount of products.	$4z ullet 5z^2 = 20z^3 \ 20z^3$ products	8.EE.A.1

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