

5.1 Exponents DAY ONE CYU

Use when you get it right all by yourself

S Use when you did it all by yourself, but made a silly mistake

H Use when you could do it alone with a little help from teacher or peer

G Use when you completed the problem in a group

X Use when a question was attempted but wrong (get help)

N Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Labeling bases and exponents	1 - 4		
Evaluating expressions with exponents	5 - 9		
Evaluating expressions given values	10 - 13		
Using product rule	14 - 19		
Using the power rule	20 - 24		
Area	25 - 28		

1 - 4: For each of the following expressions, state the exponent shown and its corresponding base.

1. 3^2
 exponent: 2
 base: 3
2. -4^2
 exponent: 2
 base: 4
3. $5x^2$
 exponent: 2
 base: x
4. $(6x)^2$
 exponent: 2
 base: 6x

5 - 9: Evaluate each expression. Show work to earn full credit.

5. 7^2 49
6. $(-5)^1$ -5
7. -2^4 -16
8. $(-2)^4$ 16
9. $(\frac{2}{3})^4$ $\frac{16}{81}$

10 - 13: Evaluate each expression for the replacement values given. Show work to earn full credit.

10. x^2 ; x = -2 4
11. $5x^3$; x = 3 135
12. $2xy^2$; x = 3 & y = 5 150
13. $\frac{2z^4}{5}$; z = -2 $\frac{32}{5}$

14 - 19: Using the product rule to simplify each expression. Write the results using exponents. Show work to earn full credit.

14. $x^2 \cdot x^5$ x^7
15. $(-3)^3 \cdot (-3)^9$ $(-3)^{12}$
 = 531,441
16. $(5y^4)(3y)$ $15y^5$
17. $(x^9y)(x^{10}y^5)$ $x^{19}y^6$
18. $(-8mn^6)(9m^2n^2)$ $-72m^3n^8$
19. $(4z^{10})(-6z^7)(z^3)$ $-24z^{20}$

20–24: Use the power rule to simplify each expression. Write the results using exponents. Show work to earn full credit.

20. $(x^9)^4$ x^{36}

21. $(pq)^8$ p^8q^8

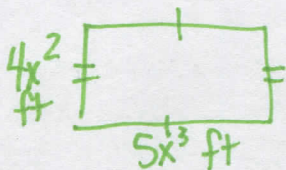
22. $(2a^5)^3$ $8a^{15}$

23. $(x^2y^3)^5$
 $x^{10}y^{15}$

24. $(-7a^2b^5c)^2$
 $49a^4b^{10}c^2$

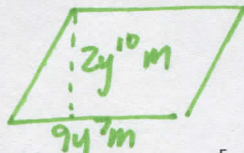
24. $(-3x^7yz^2)^3$
 $-27x^{21}y^3z^6$

25. Draw a rectangle that has width $4x^2$ feet and length $5x^3$ feet. Find its area as an expression in x .
($A = \text{length} \cdot \text{width}$)



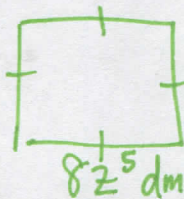
$A = 20x^5 \text{ ft}^2$

26. Draw a parallelogram that has base length $9y^7$ meters and height $2y^{10}$ meters. Find its area as an expression in y .
($A = \text{base} \cdot \text{height}$)



$A = 18y^{17} \text{ m}^2$

27. Draw a square that has sides of length $8z^5$ decimeters. Find its area. ($A = \text{side squared}$)



$A = 64z^{10} \text{ dm}^2$

28. Draw a circle with a radius $5y$ centimeters, find its area. Do not approximate pi. ($A = \pi r^2$)



$A = 25y^2 \pi \text{ cm}^2$

CYU Reflection: How far can you go: basic, intermediate, or advanced?

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

