

Evaluating Exponential Expressions

This activity is designed for struggling students to isolate the skill of evaluating exponential expressions with negative numbers. In order to practice the isolated skill, students should perform the substitution step by hand, then they may use their TI-30XS Multiview calculator to simplify the resultant expression.*

1. Evaluate x^2 for $x = 1$.

8. Evaluate x^3 for $x = -1$.

2. Evaluate x^2 for $x = -1$.

9. Evaluate y^3 for $y = 2$.

3. Evaluate y^2 for $y = 2$.

10. Evaluate y^3 for $y = -2$.

4. Evaluate y^2 for $y = -2$.

11. Evaluate z^3 for $z = 5$.

5. Evaluate z^2 for $z = 5$.

12. Evaluate z^3 for $z = -5$.

6. Evaluate z^2 for $z = -5$.

13. Evaluate $-x^2$ for $x = 1$.

7. Evaluate x^3 for $x = 1$.

14. Evaluate $-x^2$ for $x = -1$.

15. Evaluate $-y^2$ for $y = 2$.

23. Evaluate $-z^3$ for $z = 5$.

16. Evaluate $-y^2$ for $y = -2$.

24. Evaluate $-z^3$ for $z = -5$.

17. Evaluate $-z^2$ for $z = 5$.

25. Evaluate x^2y for $x = 3$, $y = -4$.

18. Evaluate $-z^2$ for $z = -5$.

26. Evaluate xy^2 for $x = 3$, $y = -4$.

19. Evaluate $-x^3$ for $x = 1$.

27. Evaluate $-x^2y$ for $x = 3$, $y = -4$.

20. Evaluate $-x^3$ for $x = -1$.

28. Evaluate $-xy^2$ for $x = 3$, $y = -4$.

21. Evaluate $-y^3$ for $y = 2$.

29. Evaluate $-4x^2y$ for $x = -6$, $y = 1$.

22. Evaluate $-y^3$ for $y = -2$.

30. Evaluate $3xy^2$ for $x = -6$, $y = 1$.

*The sheet may also be used to isolate the skill of using the STORE function in a TI-30XS calc in order to perform the substitution. In that case, instruct students to STORE THE VALUE OF THE VARIABLE using the Sto $\rightarrow$ key, then enter the expression exactly as shown, before pressing enter. The calculator will then substitute the stored value into the expression and simplify.

ANSWERS:

1. Evaluate x^2 for $x = 1$. **1**

8. Evaluate x^3 for $x = -1$. **-1**

2. Evaluate x^2 for $x = -1$. **1**

9. Evaluate y^3 for $y = 2$. **8**

3. Evaluate y^2 for $y = 2$. **4**

10. Evaluate y^3 for $y = -2$. **-8**

4. Evaluate y^2 for $y = -2$. **4**

11. Evaluate z^3 for $z = 5$. **125**

5. Evaluate z^2 for $z = 5$. **25**

12. Evaluate z^3 for $z = -5$. **-125**

6. Evaluate z^2 for $z = -5$. **25**

13. Evaluate $-x^2$ for $x = 1$. **-1**

7. Evaluate x^3 for $x = 1$. **1**

14. Evaluate $-x^2$ for $x = -1$. **-1**

15. Evaluate $-y^2$ for $y = 2$. -4

23. Evaluate $-z^3$ for $z = 5$. -125

16. Evaluate $-y^2$ for $y = -2$. -4

24. Evaluate $-z^3$ for $z = -5$. 125

17. Evaluate $-z^2$ for $z = 5$. -25

25. Evaluate x^2y for $x = 3$, $y = -4$. -36

18. Evaluate $-z^2$ for $z = -5$. -25

26. Evaluate xy^2 for $x = 3$, $y = -4$. 48

19. Evaluate $-x^3$ for $x = 1$. -1

27. Evaluate $-x^2y$ for $x = 3$, $y = -4$.
36

20. Evaluate $-x^3$ for $x = -1$. 1

28. Evaluate $-xy^2$ for $x = 3$, $y = -4$.
-48

21. Evaluate $-y^3$ for $y = 2$. -8

29. Evaluate $-4x^2y$ for $x = -6$, $y = 1$.
-144

22. Evaluate $-y^3$ for $y = -2$. 8

30. Evaluate $3xy^2$ for $x = -6$, $y = 1$.
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