

# Chapter Test C

For use after Chapter 8

**Simplify the expression, if possible. Write your answer as a power.**

1.  $x^8 \cdot x^{10} \cdot x^4$
2.  $[(x - 1)^3]^8$
3.  $(-3xy)^5$
4.  $(-3a^2b^3)^4(2ab)^3$

**Simplify. Then evaluate the expression when  $a = 1$  and  $b = 2$ .**

5.  $-(a^5b^2)^3$
6.  $(a^3b^4) \cdot (a^2b^3)^4$

**Complete the statement using  $<$  or  $>$ .**

7.  $(9^3)^4$  ?  $9^{11}$
8.  $(4^3 \cdot 7)^5$  ?  $4^{14} \cdot 7^5$

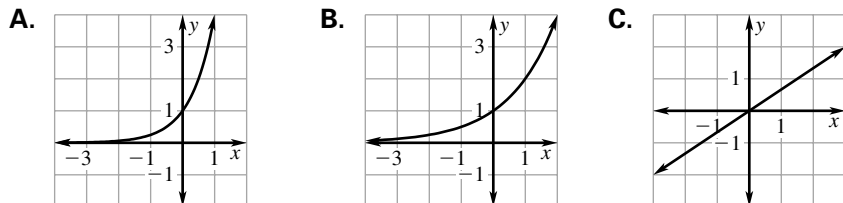
**Evaluate the expression. Write your answer as a fraction in simplest form.**

9.  $4^3 \cdot 0^{-2}$
10.  $5^8 \cdot 5^{-8}$

**Rewrite the expression with positive exponents.**

11.  $(8a^{-5})^2$
12.  $\frac{1}{(4b^{-6})^2}$

**Match the equation with its graph.**



13.  $y = 2^x$
14.  $y = \frac{2}{3}x$
15.  $y = 4^x$

**Evaluate the expression. Write your answer as a fraction in simplest form.**

16.  $\frac{(-5)^3}{-5^3}$
17.  $\left(-\frac{4}{5}\right)^3$

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# Chapter Test C

For use after Chapter 8

**Simplify the expression. The simplified expression should have no negative exponents.**

18.  $\frac{10x^3y^2}{4xy^2} \cdot \frac{8x^5y^3}{3x}$

19.  $\frac{8x^{-2}y^5}{9x^2y} \cdot \frac{3x^5y^{-3}}{4x^{-2}y}$

**Rewrite the number in decimal form.**

20.  $8.92635 \times 10^8$

21.  $1.6935 \times 10^{-8}$

**Rewrite the number in scientific notation.**

22. 0.0000159

23. 168,269.83

**Evaluate the expression without using a calculator. Write the result in decimal form.**

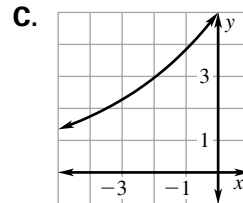
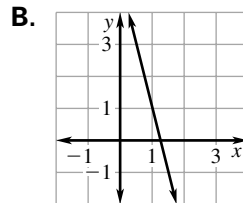
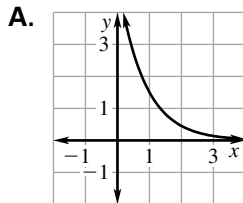
24.  $(8 \times 10^5) \cdot (1.2 \times 10^{-4})$

25.  $\frac{8.8 \times 10^{-1}}{1.1 \times 10^{-1}}$

26. In 1998, the population of a city was 250,000. Then each year for the next five years, the population increased by 4.5%. Write an exponential growth model to represent this situation.

27. You buy a used truck for \$14,000. It depreciates at the rate of 17% per year. Find the value of the truck after 3 years.

**Match the equation with its graph.**



28.  $y = 5 - 4x$

29.  $y = 5(1.3)^x$

30.  $y = 5(0.3)^x$

**Classify the model as exponential growth or exponential decay.**

31.  $y = 12\left(\frac{8}{7}\right)^x$

32.  $y = 18\left(\frac{4}{5}\right)^x$

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