

$b^x \cdot b^y = b^{x+y}$
 $FV = P(1+r)^n$
Exponents
 &
Exponentials
 $(b^x)^y = b^{xy}$
 $y = a \cdot b^x$

1 Which expression is equivalent to $18(3)^{n+2}$?

A $2(3)^n$
 B $2(3)^{n+4}$
 C $2(3)^{2n+2}$
 D $2(3)^{2n+4}$

2 Write an expression equivalent to m^5 that includes...

...a fraction	...a negative exponent	...a radical	...only even exponents

3 Each day, Julian deposits 2 times as much money as he did the day before into his savings account. His initial deposit is \$6. Drag a value to each box to complete the equation to model the deposit, y , on day x .

0	
1	7
2	8
3	9
4	x
5	y
6	

$y = \square (\square)^{\square}$

4

The change in the population of fruit flies can be modeled by the equation $P(t) = 3(1.50)^t$, where t is time in days. Which statement describes the change in the population of fruit flies?

- A 1.50% decrease daily
- B 1.5% increase daily
- C 50% increase daily
- D 150% decrease daily

5

Rewrite each radical expression as a rational exponent.

$$\sqrt[3]{x^2y^3}$$

$$\sqrt{c^5}$$

$$\sqrt[5]{xy^2}$$

Rewrite each rational exponent as a radical expression.

$$k^{\frac{3}{4}}$$

$$5a^{\frac{2}{3}}$$

$$(xy)^{\frac{3}{2}}$$

6

Stacy owns a collection of dolls from the 19th century, currently valued at \$67,000. The value increases by 12.5% annually. Which function represents the value of the doll collection after t years?

- A $f(t) = 67000(0.125)^t$
- B $f(t) = 67000(0.857)^t$
- C $f(t) = 67000(1.125)^t$
- D $f(t) = 67000(85.7)^t$

7

The area of the circular surface of the pond, A , is related to V , the volume of water in the pond by the formula described below.

$$A = (36\pi)^{\frac{1}{3}}V^{\frac{2}{3}}$$

Which of these are equivalent formulas?

Select the **two** that apply.

A. $A = 12\sqrt[3]{\pi V^2}$

C. $A = \sqrt[3]{36\pi} \left(\sqrt[3]{V}\right)^2$

E. $A = \frac{1}{\sqrt[3]{36\pi V^{\frac{3}{2}}}}$

B. $A = \sqrt[3]{36\pi V^2}$

D. $A = \left(\sqrt[3]{36\pi V}\right)^2$