$b^x \cdot b^y = b^{x+y}$

$FV = P(1+r)^n$

Exponents & Exponentials

$(b^x)^y = b^{xy}$

$y = a \cdot b^x$

1 Which expression is equivalent to $24(2)^{a+5}$?

A $3(2)^{a+1}$

B $3(2)^{a+8}$

C $3(2)^{2a+6}$

D $3(2)^{3a+3}$

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

…a fraction	…a negative exponent	…a radical	…only exponents greater than 5

3 K'Neal is working on his free throws this month. Each day he attempts twice as many free throws as he did the day before. The first day he attempts 10 free throws. Fill in the boxes with numbers and/or variables to complete the equation for the number of attempts, *y*, he attempts on day *x*.

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

4 Lira is a beekeeper. The change in the population of honey bees in her hives can be modeled by the equation $H(t) = 1000(.80)^t$, where *t* is the time in weeks. Which statement describes the population change of Lira's honey bees?

A 80% increase weekly
B 80% decrease weekly
C 20% decrease weekly
D 20% increase weekly

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 Ramone has a collection of original pressing vinyl records, currently valued at $12,500. The value of the collection increases by 8% annually. Which function represents the value of his record collection after *x* years?

A $f(x) = 12{,}500(.08)^x$
B $f(x) = 12{,}500(.92)^x$
C $f(x) = 12{,}500(1.08)^x$
D $f(x) = 12{,}500(1.8)^x$

7 The area of the base of a cone-shaped pile of sand, B, is related to S, the amount of sand in the pile, by the formula $S = \sqrt[3]{36V^2\pi}$.

Which of these are equivalent formulas? Select all that apply.

A $S = (6V^3\pi)^{\frac{1}{2}}$ **B** $S = 36(V^2\pi)^{\frac{1}{3}}$ **C** $S = (36V^2\pi)^{\frac{1}{3}}$

D $S = 6^{\frac{2}{3}}V^{\frac{2}{3}}\pi^{\frac{1}{3}}$ **E** $S = \left(\frac{\pi}{36\sqrt{V}}\right)^3$