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**Day 3 – Laws of Exponents**

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**1. Directions:** Simplify each expression.

a.  $x^2 \cdot x^3$

b.  $y^3 \cdot y^5$

c.  $n^4 \cdot n^5$

d.  $x^2 y^3 x^3 y^5$

e.  $a^2 b^3 \cdot ab^4$

f.  $7y^3 z^4 \cdot 2yz^3$

g.  $3mn^3 \cdot 8m^4 n^7$

h.  $9b^2 \cdot 2a^5 \cdot a^2 b^6$

**2. Direction:** Simplify each expression.

a.  $(x^5)^2$

b.  $(n^4)^3$

c.  $-(m^2)^4$

d.  $(3x^2 y)^4$

e.  $(-5y^3 z^2)^3$

f.  $(-4mn^2)^2$

g.  $(2ab^3)^4$

h.  $(-2x^3 y^4)^2$

**3. Directions:** Simplify each expression:

a.  $\frac{x^5}{x^3}$

b.  $\frac{y^4}{y^2}$

c.  $\frac{a^3}{a^3}$

d.  $\frac{-h^{14}}{h^5}$

e.  $\frac{-12x^7}{3x^2}$

f.  $\frac{45a^7 b^3}{-5a^4 b}$

g.  $\frac{24y^8}{4y^4}$

h.  $\frac{10m^8 n^3}{2m^7}$