Part 1 → Simplify the expression.
          Write your answer using exponents.

1) a. $(3^5)^2 \cdot (-2)^7$

    b. $[(-10) \cdot 15]^3$

a. $(3^{\boxed{5)2}} \cdot (-2)^7$

$\boxed{3^{10} \cdot -2^7}$

b. $[(-10) \cdot 15]^3$

$[-150]^{3}$

-150^3

2) $-(-c^4de^5)(cd^7e^6)$

$-(-1c^{12}d^3e^{15})(1c^2d^{14}e^{12})$

$\boxed{c^{14}d^{17}e^{27}}$

Part 2 → Simplify the expression.

3) $[(y-8)^2]^5$

4) $(-4x^6)^3 \cdot (3x^7)^2$

3) $[(y-8)^{2}]^5$

$(y-8)^{10}$

4) $(-4x^6)^3 \cdot (3x^7)^2$

$(-64x^{18}) \cdot (9x^{14})$

$-576x^{32}$

Part 3 → Simplify the expression & find the
          missing exponent.

5) a. $y^8 \, y^{?} = y^{16}$ $? = 8$
              $+$

   b. $(y^8)^? = y^{16}$ $? = 2$
              $\times$

6) $(3a^3)^2 \cdot 2a^3 = 18a^9$

$(3^2a^6) \cdot 2a^3$

$9a^6 \cdot 2a^3 =$

$? = 2$

Part 4 → Word Problem Practice.

7)

Mining In 2000, Canada mined approximately 10^4 metric tons of uranium. The amount of metric tons of zinc mined in Canada in 2000 was approximately 10^2 times this amount. About how many metric tons of zinc were mined in Canada in 2000?

10^6

10^8

$\boxed{10^6}$

10^8

$(10^4)10^2 = 10^6$ $a^4 \cdot a^6 = a^{10}$