

**10.2****Practice**

For use after Lesson 10.2

Simplify the expression. Write your answer as a power.

1.  $(-6)^5 \cdot (-6)^4$

$(-6)^9$

2.  $x^1 \cdot x^9$

$x^{10}$

3.  $\left(\frac{4}{5}\right)^3 \cdot \left(\frac{4}{5}\right)^{12}$

$\left(\frac{4}{5}\right)^{15}$

4.  $(-1.5)^{11} \cdot (-1.5)^{11}$

$(-1.5)^{22}$

5.  $(y^{10})^{20}$

$y^{200}$

6.  $\left[\left(-\frac{2}{9}\right)^8\right]^7$

$\left(-\frac{2}{9}\right)^{56}$

Simplify the expression.

7.  $(2a)^6 = 2^6 \cdot a^6$

$64a^6$

8.  $(-4b)^4 = (-4)^4 \cdot b^4$

$256b^4$

9.  $\left(-\frac{9}{10}p\right)^2 = \left(-\frac{9}{10}\right)^2 \cdot p^2$

$\frac{81}{100}p^2$

10.  $(xy)^{15}$

$x^{15}y^{15}$

11.  $10^5 \cdot 10^3 - (10^1)^8$

$10^8 - 10^8$

$0$

12.  $7^2(7^4 \cdot 7^4)$

$7^2(7^8)$

$7^{10} = 282,475,249$

13. The surface area of the Sun is about  $4 \times 3.141 \times (7 \times 10^5)^2$  square kilometers.

Simplify the expression.

$4 \cdot 3.141 \cdot (7 \cdot 10^5)^2$

$12.564 \cdot 7^2 \cdot 10^{10}$

$12.564 \cdot 49 \cdot 10,000,000,000$

$6,156,360,000,000$