

LESSON
4-1 **Practice B**
Exponents

Write in exponential form.

1. $6 \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6$
 6^6

2. $7 \cdot 7 \cdot 7 \cdot 7$
 7^4

3. $(-8) \cdot (-8) \cdot (-8) \cdot (-8)$
 $(-8)^4$

4. $5 \cdot 5 \cdot 5 \cdot b \cdot b \cdot b \cdot b$
 $5^3 b^4$

Simplify.

5. 10^2
 $10 \cdot 10 = \boxed{100}$

6. $(-6)^2$
 $(-6)(-6) = \boxed{36}$

7. 8^2
 $8 \cdot 8 = \boxed{64}$

8. $(-7)^2$
 $(-7)(-7) = \boxed{49}$

9. $(-5)^3$
 $(-5)(-5)(-5) = \boxed{-125}$

10. 12^2
 $12 \cdot 12 = \boxed{144}$

11. $(-9)^2$
 $(-9)(-9) = \boxed{81}$

12. $(-4)^3$
 $(-4)(-4)(-4) = \boxed{-64}$

13. 2^5
 $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = \boxed{32}$

14. 5^4
 $5 \cdot 5 \cdot 5 \cdot 5 = \boxed{625}$

15. $(-3)^4$
 $(-3)(-3)(-3)(-3) = \boxed{81}$

16. 6^3
 $6 \cdot 6 \cdot 6 = \boxed{216}$

Evaluate each expression for the given values of the variables.

17. $n^3 - 5$ for $n = 4$
 $(4)^3 - 5 = \boxed{59}$

18. $4x^2 + y^3$ for $x = 5$ and $y = -2$
 $4(5)^2 + (-2)^3 = 100 - 8 = \boxed{92}$

19. $m^p + q^2$ for $m = 5$, $p = 2$, and $q = 4$
 $(5)^2 + (4)^2 = 25 + 16 = \boxed{41}$

20. $a^4 + 2(b - c^2)$ for $a = 2$, $b = 4$, and $c = -1$
work below

21. Write an expression for five times a number used as a factor three times.

$5x \cdot 5x \cdot 5x$ or $(5x)^3$

22. Find the volume of a regular cube if the length of a side is 10 cm. (Hint: $V = l^3$.)

$V = l^3 = 10^3 = 10 \cdot 10 \cdot 10 = \boxed{1000}$

20 $a^4 + 2(b - c^2)$
 $(2)^4 + 2((4) - (-1)^2)$
 $(2)^4 + 2((4) - 1)$
 $(2)^4 + 2(3)$
 $16 + 2(3)$
 $16 + 6$
 $\boxed{22}$