

1.  $8^3$                       2.  $r^4s^2$                       3.  $-7a^2b$   
 4.  $25a^2$  or  $5^2a^2$         5.  $9^5$                       6.  $(-5)^4$   
 7. 10,000                      8. 64                      9. 64  
 10. -64                      11. -64                      12. -216  
 13. 1,000,000                14. 108                      15. -15  
 16. 31                      17. 50                      18. -11  
 19. 42                      20. 73                      21. -212  
 22. -9                      23. 22                      24.  $-15x^2y$   
 25.  $d^6$                       26.  $8ab^2$   
 27. The student didn't multiply  $a \cdot a \cdot a$ .  
 28. -1 and 1                29. -16 and 16                30. 35  
 31. -288                      32. 9                      33. 27  
 34. -24                      35. 7.2                      36. 16  
 37. 243                      38. 196                      39. 29

40. a.

$n$	$4n$	$4^n$	$n^4$
1	4	4	1
2	8	16	16
3	12	64	81
4	16	256	256

b. 2, 4; 3; 1

41. a. 10,000 times  
 b. Answers may vary.  
 Sample: I would use  $10^4$  because other microscopes may have powers described in powers of 10.

42. Yes;  $-a^2 \neq (-a)^2$  only when  $a \neq 0$ .

43. 2,048

44.  $25 \text{ cm}^2$

45.  $125 \text{ cm}^3$

46. 8 in.

47. 4 in.

48. Answers may vary. Sample: A number *squared* is the area of a square. A number *cubed* is the volume of a cube.
49.  $x = y$  or  $x = 0$  or  $y = 0$ ;  
 $5(-2)^2(-2) = 5(-2)(-2)^2$  or  
 $5(0)^2y = 5(0)y^2$  or  $5x^2(0) = 5x(0)^2$
50. An even power of a negative number is positive. An odd power of a negative number is negative.