Name _____ Date _____ Class _____

Problem Solving

Exponents

1. The Sun is the center of our solar system. The Sun is the star closest to our planet. The surface temperature of the Sun is close to 10,000°F. Write 10,000 using exponents.

_____

2. Patty Berg has won 4^2 major women's titles in golf. Write 4^2 in standard form.

_____

3. William has 3^3 baseball cards and 4^3 football cards. Write the number of baseball cards and footballs cards that William has.

_____

4. Michelle recorded the number of miles she ran each day last year. She used the following expression to represent the total number of miles: $3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3$. Write this expression using exponents. How many miles did Michelle run last year?

_____

Choose the letter for the best answer.

5. In Tyrone's science class he is studying cells. Cell A divides every 30 minutes. If Tyrone starts with two cells, how many cells will he have in 3 hours?

   A 6 cells

   B 32 cells

   C 128 cells

   D 512 cells

6. Tanisha's soccer team has a phone tree in case a soccer game is postponed or cancelled. The coach calls 2 families. Then each family calls 2 other families. How many families will be notified during the 4th round of calls?

   F 2 families

   G 4 families

   H 8 families

   J 16 families

7. The Akashi-Kaiko Bridge is the longest suspension bridge in the world. It is located in Kobe-Naruto, Japan and was completed in 1998. It is about 3^8 feet long. Write the approximate length of the Akashi-Kaiko Bridge in standard form.

   A 6,561 feet

   B 2,187 feet

   C 512 feet

   D 24 feet

8. The Strahov Stadium is the largest sports stadium in the world. It is located in Prague, Czech Republic. Its capacity is about 12^5 people. Write the capacity of the Strahov Stadium in standard form.

   F 60 people

   G 144 people

   H 20,736 people

   J 248,832 people

Holt McDougal Mathematics

5. 1,728   6. 7,776

7. 10,000   8. 4,096

Challenge

27; 25; 16; 1; 81; 64; 36; 49; 100

NINE TO THE
NINTH POWER

Problem Solving
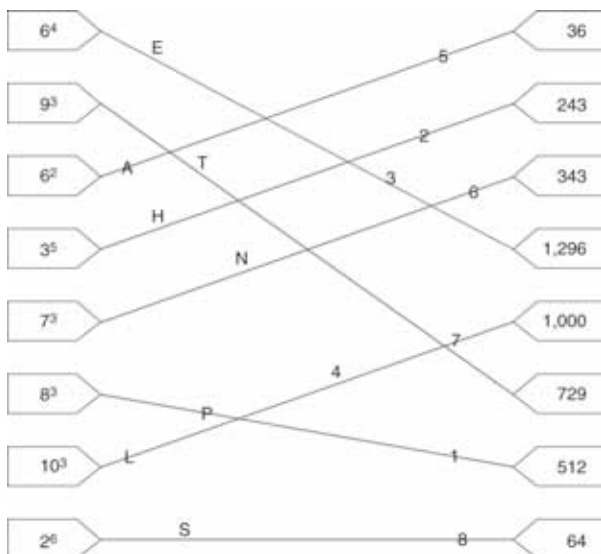
1. 10^4 2. 16

3. 27 baseball cards and
   64 football cards

4. 3^7; 2,187 miles   5. C

6. J   7. A

8. J

Reading Strategies

1. three to the fourth power

2. three is a factor 4 times: $3 \times 3 \times 3 \times 3$

3. $3^4 = 81$

4. five to the third power

5. $5 \times 5 \times 5$ 6. $5^3 = 125$

7. 2^3 means $2 \times 2 \times 2$, and 2×3 means
   $3 + 3$.

8. no;

   Possible answer: $3 \times 3 \times 3 \times 3$ is not
   the same as $4 \times 4 \times 4$.

Puzzles, Twisters & Teasers

ELEPHANTS

LESSON 1-3

Practice A

1. multiply   2. divide

3. subtract   4. exponent

5. add   6. multiply

7. G   8. F

9. H   10. A

11. C   12. E

13. D   14. B

15. $(2 \times 13) + 3$ 16. $(24 + 36) \div 10$

Practice B

1. 22   2. 9

3. 11   4. 2

5. 21   6. 1

7. 6   8. 46

9. 17   10. $(3 - 1)$

11. $(2^3 - 7)$ 12. $(9 \div 3)$

13. $(3 \cdot 2)$ 14. $(6 - 4)$

15. $(3^2 + 1)$ 16. $(0 + 5)$

17. $(3^2 - 2^3)$ 18. $(2 + 5)$

19. 41 miles   20. $4

Practice C

1. 14   2. 49

3. 38   4. 6

5. 26   6. 58

7. $(12 - 3)$ 8. (2×4)

9. $(6 + 4)$

Possible answers are given.

10. $(3^3 - 3^2)$

11. $(6 - 3) + 2 \times 4$

12. $2 \times 4 - (6 \div 3)$

13. $6 + (2 \times 3) \times 4$

14. $4 \div 2 + 6 \times 3$

15. Possible answer: $3 \times 3 \times 3 - 3^3$

16. 216 tiles

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