Name _____ Date _____ Class _____

Practice A
Order of Operations

Name the operation you should perform first.

1. $5 + 6 \cdot 2$

2. $18 \div 3 - 1$

3. $4 + (7 - 1)$

_____

_____

_____

4. $3^2 + 6$

5. $(15 + 38) \cdot 6$

6. $5 \cdot 10 - 12$

_____

_____

_____

Match each expression to its value.

	Expression	Value
_____	**7.** $7 + 8 - 2$	**A.** 9
_____	**8.** $9 + (12 - 10)$	**B.** 40
_____	**9.** $(20 - 15) \cdot 2$	**C.** 12
_____	**10.** $10 \div 5 + 7$	**D.** 0
_____	**11.** $6 + 2 \cdot 3$	**E.** 16
_____	**12.** $(2 \cdot 4) + 8$	**F.** 11
_____	**13.** $14 \div 2 \cdot 0$	**G.** 13
_____	**14.** $(5 - 1) \cdot 10$	**H.** 10

15. Sam bought two CDs for $13 each. Sales tax for both CDs was
$3. Write an expression to show how much Sam paid in all.

_____

16. Alicia made 24 chocolate chip cookies and 36 sugar cookies.
Then she divided all the cookies into 10 bags to sell at the bake
sale. Write an expression to show how many cookies she put
into each bag.

_____

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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.

10^4

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

16

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

27 baseball cards and
64 football cards

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: $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$. Write this expression using exponents. How many miles did Michelle run last year?

3^7; 2,187 miles

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?

128 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?

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.

6,561 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. Write the capacity of the Strahov Stadium in standard form.
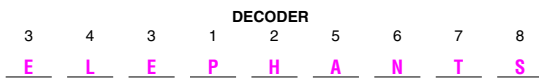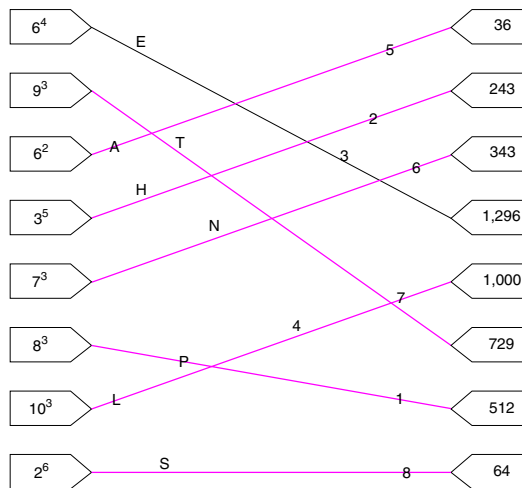
248,832

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Puzzles, Twisters & Teasers
Answer This!

What are the only land mammals that cannot jump?

To find the answer:

1. Use a ruler to match each number and its value. (Each line you draw will cross a number and a letter)

2. Write the letter under the matching number in the decoder.

6^4		36
9^3		243
6^2		343
3^5		1,296
7^3		1,000
8^3		729
10^3		512
2^6		64

DECODER

3	4	3	1	2	5	6	7	8
E	L	E	P	H	A	N	T	S

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Exploration Recording Sheet
Order of Operations

Calculators are programmed to perform operations in a certain order. Each keystroke sequence below results in 17.

3 [×] 5 [ENTER] [+] 2 [ENTER]   2 [+] 3 [×] 5 [ENTER]

For each keystroke sequence, determine the order of operations the calculator follows.

1. [( ] 2 [+] 3 [ )] [×] 5 [ENTER]   2 + 3 = 5, 5 • 5 = 25

2. 2 [∧] 3 [−] 1 [×] 4 [ENTER] 2^3 = 8, 1 • 4 = 4, 8 − 4 = 4

3. 2 [∧] [( ] 3 [−] 1 [ )] [×] 4 [ENTER] 3 − 1 = 2, 2^2 = 4, 4 • 4 = 16

Write the keystroke sequence for each expression.

4. $5 − 2^2$

5 [−] 2 [∧] 2

5. $(2 − 3)^3 + 2$

(2 − 3) [∧] 3 [+] 2

Think and Discuss

6. **Explain** why there needs to be a rule for the order of operations.

There needs to be a rule for the order of operations so that everyone can agree on one correct answer.

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Practice A
Order of Operations

Name the operation you should perform first.

1. $5 + 6 \cdot 2$

multiply

2. $18 \div 3 − 1$

divide

3. $4 + (7 − 1)$

subtract

4. $3^2 + 6$

exponent

5. $(15 + 38) \cdot 6$

add

6. $5 \cdot 10 − 12$

multiply

Match each expression to its value.

	Expression	Value
G	7. $7 + 8 − 2$	A. 9
F	8. $9 + (12 − 10)$	B. 40
H	9. $(20 − 15) \cdot 2$	C. 12
A	10. $10 \div 5 + 7$	D. 0
C	11. $6 + 2 \cdot 3$	E. 16
E	12. $(2 \cdot 4) + 8$	F. 11
D	13. $14 \div 2 \cdot 0$	G. 13
B	14. $(5 − 1) \cdot 10$	H. 10

15. Sam bought two CDs for $13 each. Sales tax for both CDs was $3. Write an expression to show how much Sam paid in all.

$(2 \cdot 13) + 3$

16. Alicia made 24 chocolate chip cookies and 36 sugar cookies. Then she divided all the cookies into 10 bags to sell at the bake sale. Write an expression to show how many cookies she put into each bag.

$(24 + 36) \div 10$

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