WarmUp

WarmUpAnswers

$$\begin{array}{r}
 46 \\
 24)1104
 \end{array}$$
 91)4823

$$\frac{34}{20)680}$$

HomeworkAnswers

1.2 Record and Practice Journal

3. 8 • 8 • 8 • 8 • 8 • 8

 8^6

4. $12 \cdot 12 \cdot 12 \cdot 12 \cdot 12 \cdot 12$ 5. $10 \cdot 10 \cdot 10 \cdot 10$ 6. $17 \times 17 \times 17$ 12^{5} 10^{4} 17^{3}

2. 13×13

 13^2

Find the value of the power.

Write the product as a power.

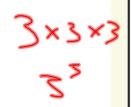
1. 5×5×5 5³

7. 4⁴ 8. 9³ 9. 24² **256 729 576**

Determine whether the number is a perfect square.

13. You complete 3 centimeters of a necklace in an hour. Each hour after the first, you triple the length of the necklace. Write an expression using exponents for the length of the necklace after 3 hours. Then find the length.

 3^3 ; 27 cm



Question what the after of inating patentheres 14 Lesson 1.3

Lesson 1.3 September 8, 2014

LessonObjective:

Students will be able to:

use the order of operaons to evaluate a numerical expression.

Self-EvaluationScale

Score	Description
4	I can teach other students how to use the order of operaons to evaluate a numerical expression.
3	I can use the order of operaons to evaluate a numerical expression.
2	I recognize, but sll need help to use the order of operaons to evaluate a numerical expression.
1	I do not know how to use the order of operaons to evaluate a numerical expression.

Activity1&2

With a partner, work on Acvity 1 & 2 on pages 11 & 12 of your Big Ideas Record and Pracce Journal.

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1 ACTIVITY: Comparing Different Orders

Work with a partner. Find the value of the expression by using different orders of operations. Are your answers the same? (Circle yes or no.)

Add, then multiply.	Multiply, then add.
$3 + 4 \times 2 = $	$3 + 4 \times 2 = $

b. Add, then subtract. Subtract, then add. Same?
$$5 + 3 - 1 =$$
_____ Yes No

c. Divide, then multiply. Multiply, then divide. Same?
$$12 \div 3 \bullet 2 = \underline{\hspace{1cm}} 12 \div 3 \bullet 2 = \underline{\hspace{1cm}} Yes \quad No$$

d. Divide, then add. Add, then divide. Same?
$$16 \div 4 + 4 = \underline{\hspace{1cm}} 16 \div 4 + 4 = \underline{\hspace{1cm}} Yes \quad No$$

e. Multiply, then subtract. Subtract, then multiply. Same?
$$8\times 4 - 2 = \underline{\hspace{1cm}} 8\times 4 - 2 = \underline{\hspace{1cm}} Yes \quad Nc$$

f. Multiply, then divide. Divide, then multiply. Same?
$$8 \bullet 4 \div 2 = \underline{\hspace{1cm}} 8 \bullet 4 \div 2 = \underline{\hspace{1cm}} Yes \quad No$$

g. Subtract, then add.
 Add, then subtract.
 Same?

$$13 - 4 + 6 =$$
 $13 - 4 + 6 =$
 Yes No

h. Multiply, then add. Add, then multiply. Same?
$$1\times 2+3=\underline{\hspace{1cm}}1\times 2+3=\underline{\hspace{1cm}}$$
 Yes No

September 8, 2014 Period 4 Lesson 1.3

LearningObjective: Students will be able to use the order of operaons to evaluate a numerical expression.

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Work with a partner. Use all the symbols and numbers to write an expression that has the given value.

Symbols and Numbers	Value	Expression
a. (), +, ÷, 3, 4, 5	3	
b . (), -, ×, 2, 5, 8	11	
c. (),×,÷, 4, 4, 16	16	
d. (), -, ÷, 3, 8, 11	1	
e. (),+,×, 2, 5, 10	70	

NumericalExpression

an expression that contains only numbers and operaons

Evaluate

to find the value of

OrderofOperations

a set of rules to evaluate a mathemacal expression

PE.M.D.A.S.



Order of Operations

- Perform operations in Parentheses.
 Evaluate numbers with Exponents.
- **3.** Multiply or Divide from left to right.
- 4. Add or Subtract from left to right.

Using Order of Operations

a. Evaluate $12 - 2 \times 4$.

$$12 - 2 \times 4 = 12 - 8$$

$$= 4$$

b. Evaluate $7 + 60 \div (3 \times 5)$.

$$7 + 60 \div (3 \times 5) = 7 + 60 \div 15$$

= $7 + 4$
= 11

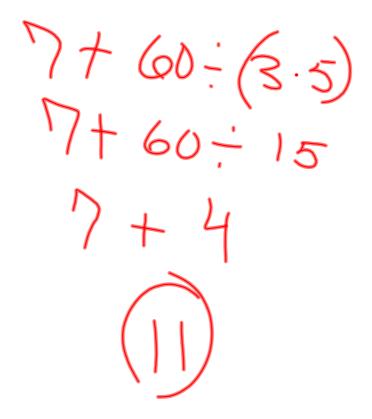
Multiply 2 and 4.

Subtract 8 from 12.

Perform operation in parentheses.

Divide 60 by 15.

Add 7 and 4.

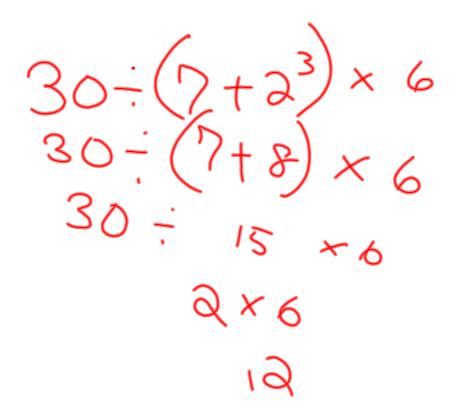


Using Order of Operations with Exponents

Evaluate $30 \div (7 + 2^3) \times 6$.

Evaluate the power in parentheses first.

$$30 \div (7 + 2^3) \times 6 = 30 \div (7 + 8) \times 6$$
 Evaluate 2^3 .
 $= 30 \div 15 \times 6$ Perform operation in parentheses.
 $= 2 \times 6$ Divide 30 by 15.
 $= 12$ Multiply 2 and 6.



OnYourOwn

Evaluate the expression.

1.
$$7 \cdot 5 + 3$$

2.
$$(28-20) \div 4$$

1.
$$7 \cdot 5 + 3$$
 2. $(28 - 20) \div 4$ **3.** $6 \times 15 - 10 \div 2$

4.
$$6+2^4-1$$

5.
$$4 \cdot 3^2 + 18 - 9$$

4.
$$6 + 2^4 - 1$$
 5. $4 \cdot 3^2 + 18 - 9$ **6.** $16 + (5^2 - 7) \div 3$

Using Order of Operations

a. Evaluate 9 + 7(5 - 2).

$$9+7(5-2)=9+7(3)$$
 Perform operation in parentheses.
= $9+21$ Multiply 7 and 3.
= 30 Add 9 and 21.

b. Evaluate $15 - 4(6 + 1) \div 2^2$.

$$15-4(6+1) \div 2^2 = 15-4(7) \div 2^2$$
 Perform operation in parentheses.
$$= 15-4(7) \div 4$$
 Evaluate 2^2 .
$$= 15-28 \div 4$$
 Multiply 4 and 7.
$$= 15-7$$
 Divide 28 by 4.
$$= 8$$
 Subtract 7 from 15.

OnYourOwn

Evaluate the expression.

7.
$$50 + 6(12 \div 4) - 8^2$$
 8. $5^2 - 5(10 - 5)$ 9. $\frac{8(3 + 4)}{7}$

8.
$$5^2 - 5(10 - 5)$$

9.
$$\frac{8(3+4)}{7}$$

10. WHAT IF? In Example 4, you add the dwarf planet Pluto to your model. Use a verbal model to find your total cost assuming you do not need more paint. Explain.

Assignment

Complete problems 6, 10, 14, 18, 19, & 30 on pages 20 & 21 in your Big Ideas Text Book.

Lesson 1.3

September 8, 2014



Lesson 1.3 September 8, 2014

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Homework

In your Big Ideas Record and Pracce Journal page 14.