



Warm up Grade 6

Date: Oct. 1



1) If Homer has 20 donuts and 30 cookies. He wants to place all of them in baskets so that each basket has the same number of donuts and cookies. What is the least number of baskets Homer can make?

20
 1x20
 2x10
 4x5

30
 1x30
 2x15
 3x10
 5x6

1, 2, 4, 5, 10, 20
 - 1, 2, 4, 5, 10, 20
 * 0

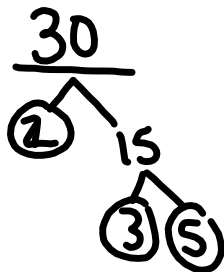
1, 2, 3, 5, 6, 10, 15, 30
 - 1, 2, 3, 5, 6, 10, 15, 30
 * 0

2) Write in standard form:

a. ⁴⁰⁴four hundred four billion ²³¹two hundred thirty-one million five thousand ten

4 0 4 2 3 1 0 0 5 0 1 0
 billions million thousand units

3) Write the PRIME factors of 30 (Show work)



prime #
↳ are only divisible
by 1 and itself

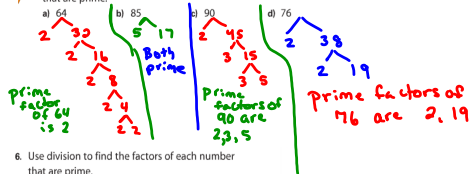
Ex) 2, 3, 5, 7, 11, 13, 17, 19, 23, ...

pg 65
#5a,b,c,d
#6a,b,c,d
#8a,b
#9

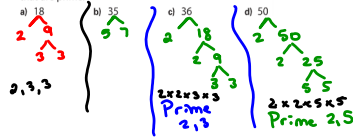
Homework Solutions



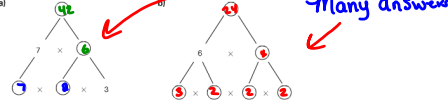
5. Draw a factor tree to find the factors of each number that are prime.



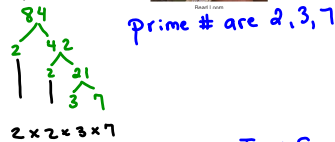
6. Use division to find the factors of each number that are prime.



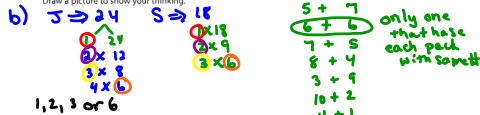
8. Copy and complete each factor tree in as many different ways as you can.



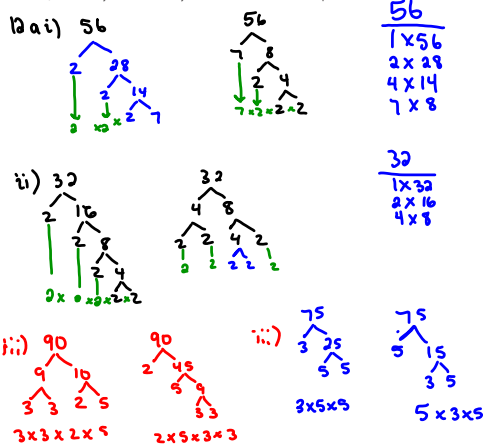
9. Patan uses a bead loom to make a bracelet. She wants to use all 84 beads, and to put the beads in rows of equal length. Patan also wants the number of beads in each row to be a factor of 84 that is a prime number. How many beads could Patan put in each row? Give as many answers as you can. Explain how you found the numbers.



10. Julia and Sandhu bought packages of granola bars. Each package has the same number of bars. a) Julia and Sandhu each had a total of 12 bars. How many bars could there be in one package? b) Suppose Julia had 24 bars and Sandhu had 18 bars. How many bars could there be in one package? Draw a picture to show your thinking.



12. a) Draw 2 different factor trees for each number. i) 56 ii) 32 iii) 90. b) Why is it possible to draw 2 different factor trees for each number in part a? c) Name 2 composite numbers for which you can draw only one factor tree. Explain why this is so. d) How many factor trees can you draw for the number 67? Explain.



b) Each # in "a" has 4 or more factors, so I can use two different pairs of factors to start each tree.

c) 9, 15; each # has two prime #s as factors in addition to 1 and itself.

d) 67 is prime so cannot draw a tree. 1×67



Order of Operations

N9 Explain and apply the order of operations, excluding exponents, with and without technology (limited to whole numbers).

Definition:

Expression: is a math statement with numbers and operations

(no equal sign)

BUT we can evaluate an expression to find an answer

Don't copy just listen

Which operation would you complete first?

$$10 + 8 \times 3 - 5 = ?$$

Find answers in as many ways you can.

There is only one correct answer. It is _____

What strategy gives you this?

Let's try 3 different ways

$$10 + 8 \times 3 - 5 = ?$$

$$\begin{array}{r} \underbrace{10 + 8}_{18} \times 3 - 5 \\ \underbrace{54 - 5}_{49} \end{array}$$

$$10 + 8 \times 3 - 5 = ?$$

$$\begin{array}{r} 10 + \underbrace{8 \times 3}_{24} - 5 \\ \underbrace{10 + 24}_{34} - 5 \\ 34 - 5 \\ 29 \end{array}$$

$$10 + 8 \times 3 - 5 = ?$$

$$\begin{array}{r} 10 + \underbrace{8 \times 3}_{24} - 5 \\ 10 + \underbrace{24 - 5}_{19} \\ 10 + 19 \\ 29 \end{array}$$



Often to win contest, a person must answer a skill testing question. The skill testing question is most likely an order of operations question.



The purpose of the order of operations is to ensure that the same answer is reached regardless of who performs the calculations



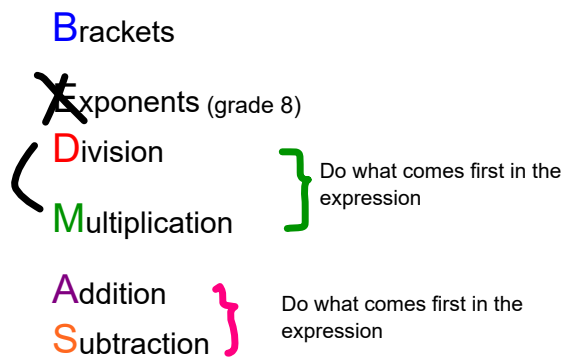
Rules for Order of Operations



- * Do the operations in brackets (we use brackets first if we want certain operations carried out first)
- * Multiply and divide, in order from left to right
- * Then add and subtract, in order, from left to right.

acronym

Study





~~B~~EDMAS

PRIZE CLAIM FORM II - FOR CANADIAN RESIDENT PRIZE CLAIMANTS
OF FOOD PRIZES, \$100 TIM CARD

$$11 + 2 \times 10 \div 4 - 7$$

Please complete the following skill-testing question (print clearly):

ANSWER: _____

$$\begin{aligned} & 11 + 2 \times 10 \div 4 - 7 \\ = & 11 + 20 \div 4 - 7 \\ = & 11 + 5 - 7 \\ = & 16 - 7 \\ = & 9 \end{aligned}$$

Evaluate the expression:

$$\begin{aligned} & 7 + 12 \div 3 \\ & = \underline{7} + 4 \\ & = 11 \end{aligned}$$

Brackets

~~Exponents~~ (grade 8)

Division

Multiplication

Addition

Subtraction

} Do what comes first in the expression

} Do what comes first in the expression



Evaluate the expression:

$$\begin{array}{l} 22 - 12 + 4 \\ = 10 + 4 \\ = 14 \end{array}$$

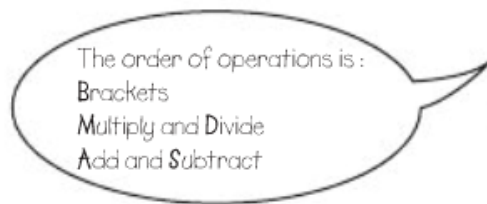
~~B~~ E D M A S

↓
the
order
that
you see
in
question

Evaluate the expression:

$$\begin{aligned} & 6 \times \underline{(5+2)} \\ = & 6 \times 7 \\ = & 42 \end{aligned}$$

~~B~~ A D M A S



Some calculators follow the order of operations.
Others do not.
Check to see how your calculator works.

Class/Homework

YOU MUST show work

BEDMAS



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#1a,b,c,d,e,f,

~~#2~~

~~#4a,c,e,g (Show work but can use a cal)~~

~~#5a,c,e,g,i~~

~~#6(a,b,c,d)~~

K

P

Practice

1. Evaluate each expression.

Use the order of operations.

a) $18 + 4 \times 2$

b) $25 - 12 \div 3$

c) $24 + 36 \div 9$

d) $12 - 8 - 4$

e) $50 - 7 \times 6$

f) $7 \times (2 + 9)$

g) $81 \div 9 - 6$

h) $25 \div (9 - 4)$

i) $13 - 6 + 8$

j) $(9 + 6) \div 3$

k) $19 + 56 \div 8$

l) $8 \times (12 - 5)$



2. Does your calculator follow the order of operations?

Press: $9 + 6 \times 3 =$

Explain how you know.

3. Bianca entered $52 + 8 \times 2 =$ in her calculator.
She got the answer 120.
In what order did Bianca's calculator perform the operations?
How do you know?





4. Use a calculator to evaluate each expression.

a) $332 - 294 \div 49$

b) $209 \times 12 \div 4$

c) $312 \times 426 - 212 \times 158$

d) $2205 + 93 \div 3 - 1241$

e) $156 \times 283 + 215 \times 132$

f) $245 \times 138 \div (7 + 23)$

g) $(148 + 216) \times (351 - 173)$

h) $1258 + 341 \times 28 - 2357$

5. Use mental math to evaluate.

a) $20\,000 - 4000 \times 2$

c) $(1000 + 6000) \times 3$

e) $5 \times (4 + 11)$

g) $(50 + 50) \div 50$

i) $16 \div 2 \times 9$

b) $6 + 125 \div 25$

d) $60 \times 3 \div 9$

f) $50 + 50 \div 50$

h) $9 \times 10 - (30 + 30)$

j) $200 - 200 \div 20$

6. Use mental math to evaluate.

a) $4 \times 7 - 2 + 1$

b) $4 \times (7 - 2) + 1$

c) $4 \times 7 - (2 - 1)$

d) $4 \times (7 - 2 + 1)$

e) $(4 \times 7 - 2) + 1$

f) $4 \times 7 - (2 + 1)$

Which expressions give the greatest answer?

The least answer?



7. How many different answers can you get by inserting one pair of brackets in this expression?

$$10 + 20 - 12 \div 2 \times 3$$

Write each expression, then evaluate it.

8. Use the numbers 2, 3, and 4 and any operations or brackets.

Write an expression that equals each number below.

Try to do this more than one way.

- a) 9 b) 10 c) 14 d) 20 e) 6

9. Alexi bought 5 T-shirts for \$12 each and 3 pairs of socks for \$2 a pair. Which expression shows how much Alexi spent in dollars? How do you know?
- a) $5 \times 12 \times 3 \times 2$
 - b) $5 \times 12 + 3 \times 2$
 - c) $(5 + 3) \times (12 + 2)$



10. Choose mental math, a calculator, or paper and pencil to evaluate. For each question, how did you decide which method to use?



- | | |
|---------------------------|-----------------------------------|
| a) $238 - (2 \times 73)$ | b) $47 \times (16 \times 18)$ |
| c) $(36 + 14) \div 10$ | d) $36 \times (48 \times 8)$ |
| e) $60 \times (4 \div 2)$ | f) $(200 + 50) \times (9 \div 3)$ |

11. Monsieur Lefèvre bought 2 boxes of fruit bars for his 3 children. Each box has 6 fruit bars. The children shared the fruit bars equally. How many fruit bars did each child get? Write an expression to show the order of operations you used.



12. Copy each number sentence.

Use brackets to make each number sentence true.

a) $36 \div 4 \times 3 = 3$

b) $20 \div 5 \times 2 + 3 = 5$

c) $10 - 4 \div 2 - 1 = 6$

d) $6 \times 2 + 8 \div 4 = 15$