Mental Math Techniques

I. <u>PATTERNS Multiplying</u>:

**When multiplying #'s ending in zeroes, multiply the non-0 numbers.
Then attach one zero in the answer for each zero in the factors.**

Examples)   **10 x 10 = 100   20 x 60 = 1,200   40 x 500= 20,000**

Problem 1)   **4**0 x **6** =

a) Multiply NON-ZERO digits   _____ x _____ = _____
b) How many zeroes are there to attach? _____
c) Attach zeroes to the answer from "a"   40 x 6 = _____

Problem 2)   30 x 700 =

a) Multiply NON-ZERO digits   _____ x _____ = _____
b) How many zeroes are there to attach? _____
c) Attach zeroes to answer in "a"   30 x 700 = _____

Problem 3)   1200 x 300 =

   a) Multiply NON-ZERO digits _____
   b) Count zeroes and attach _____
   c) 1200 x 300 =   _____

Problem 4)   50 x 80 = _____

Problem 5)   90 x 70 = _____

Problem 6)   **6**0 x ? = **12**,000

   Ask yourself "6 times what is 12?"   ____
   How many zeroes are in the product? _____
   How many zeroes did you start with? _____
   How many more zeroes do you need? _____

   60 x _____ = 12,000

Problem 7)   20 x a = 8,000   a = _____

Problem 8)   30 x b = 6,000   b= _____

Problem 9)   20,000 x c = 18,000,000   c = _____

***Problem 10)   7,000 x 2 x 200 = _____

PATTERNS Dividing:
When dividing #'s ending in zeros, divide the non-zero numbers.
Then <u>cancel </u>zeroes in factors and put remaining zeroes on your answer.

Do you notice anything about these _answers_?

examples $500 \div 10 = 50$ $21,000 \div 700 = 30$ $72,000 \div 80 = 900$

Problem 1) $45,000 \div 500$

a) Divide NON-ZERO digits ____ ÷ ____ = _____
b) Cancel (cross out zeroes in factors) How many zeroes are left? _____
c) Attach zeroes to answer in part "a" $45,000 \div 500 =$ _____

Problem 2) $640 \div 80$

a) Divide NON-ZERO digits ___ ÷ ___ = _____
b) Cancel (cross out zeroes in factors) How many are left? _____
c) Attach zeroes to answer in "a" $640 \div 80$ = _____

Problem 3) $14,000 \div 20 =$

**Problem 4) $2000 \div 50 =$

**Problem 5) $400 \div 80 =$

6) $540 split among 60 kids

7) Make up your own word problem, using the concept from today using Mr. Hoffman. Write the equation, solve mentally. Label your answer (ex. 30 **gummy bears**).

_____

_____

math work here:

NAME: _____ **Sept 2021**

MATH HOMEWORK   Mental Math Techniques Day 1

Solve mentally using "PATTERNS." See your notes for help in you need.

1)   30 x 50 = _____

2)   600 x 30 = _____   3) 50 x 6 = _____   4) 20 x 700 = _____

5) 50 x 13 x 2 = _____

6) Find the missing value for "t" using a mental math technique:

             40 x t = 16,000   answer t = _____

7) 30 x m = 1,500   answer m = _____

8)   8,000 ÷ 400 = _____   9)   640 ÷ 8 = _____

*10)   20,000 ÷ 50 = _____

11) There are 20 people in a company and each person earns $14,000. How much do they earn altogether?
    Write the equation (number sentence) that matches the problem, then solve mentally.

12)   There were 20 cars each worth $50,000. How much were the cars worth altogether?
    Write the equation (number sentence) that matches the problem, then solve mentally.

13) There are 1,200 6th graders and the teachers want to put them in groups of 20 kids. How many groups
would be formed?   Write the equation (number sentence) that matches the problem, then solve mentally.

14) FOLLOW THESE STEPS BELOW EXACTLY for an exceptional helping math experience:

Step 1) Go to HOFFKIDS.com
Step 2) Go to Zone 4 called Math Links
**Step 3) Scroll down until you see a box called "M330 Mental Math Patterns with Mult & Div" If you find
the quicker way to get to this, you are amazing!**
Step 4) Click the M330 box and complete all 17 mental math questions.
**Step 5) When done, click the TO CONTACT button at the top and fill out
the short Contact form sending Mr. Hoffman your score and your name.**

M330

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