

5th Grade Assignment – Week #24

Group Assignments: Do the below problems either on Tuesday or on Thursday

Math Magic Trick

In Lecture #2 from last week, I introduced a “math magic trick”. These are the steps:

- You can secretly choose any two-digit number.
- You then add 7 to the number.
- Then you multiply by 3.
- Then you subtract the original number to get your final result.

What made it a magic trick was that you can tell your final resulting number, and I knew what your original number was. For example, one student in the live lecture said that her final number was 57, and I knew (after a bit of thought) that the original number had to be 18. Your goal here is to figure out how I did this! Here is how to proceed:

- Everyone in the group should choose their own number, go through the above steps to get their final number (parents should check to be sure the calculations are correct).
- Share both the original number and the final number with the others in the group. (If you only have two people in your group, then each person should do it twice so that you have more examples to work with.)
- Can you see how I can look at the final number and know what the original number was? If so, then you are a mathamagician!
- Do these problems:
 - 1) If the final number is 43, what was the original number?
 - 2) If the final number is 85, what was the original number?
 - 3) If the final number is 159, what was the original number?

Sequences. With each sequence, describe what you need to do to get the next step, and then add as many numbers to the sequence as you wish.

- 4) 4, 37, 367,
- 5) 1, 1, 2, 3, 5, 8,

Word Problems

- 7) If 6 baseballs cost \$10.20, how much do 7 baseballs cost?
- 8) Abe gets paid \$140 in an 8-hour work day. How much does he get paid in 40 hours? How much does he get paid in 25 hours?
- 9) If a tree grows $1\frac{1}{2}$ inches every month, how tall (in feet) will it be when it is 50 years old?
- 10) A board that is 20-feet long is cut into 16 equally long pieces. How long is each piece?

Individual Work

Sequences. With each sequence, describe what you need to do to get the next step, and then add as many numbers to the sequence as you wish.

- 1) 9, 13, 17,
- 2) 7, 20, 33,
- 3) 4, 20, 100,
- 4) 9, 12, 18, 30,

Word Problems.

- 5) If 6 baseballs cost \$12, how much do 11 baseballs cost?
- 6) Emma gets paid \$17 per hour. How much does she get paid in a 36-hour work week?
- 7) If two t-shirts cost \$25.90, how much do 5 t-shirts cost?

Four Processes.

- 8)
$$\begin{array}{r} 4836 \\ 6910 \\ 5083 \\ 8597 \\ 7742 \\ + \underline{262} \end{array}$$

9) $624 - 188$

10) $7205 - 2749$

11) 32×34

12) 849×627

13) $638 \div 5$

14) $94650 \div 30$