

## 6<sup>th</sup> Grade Assignment – Week #26

Individual Work: As always, do what you can!

- Do as much as you can with Sheet #22 in the workbook.

Group Assignments:

*For Tuesday*

### **Divisibility Magic!**

- Notes for the parent:
  - If a student has troubles with long division, they may need some extra support in doing this exercise.
  - It is probably best for each student to do their own calculation, starting with their own unique number, and then share their result with the group. Alternatively, you can have the group work through the calculation together.
- The adult that is supervising the group should read these instructions, pausing after each step to make sure everyone is caught up.  
“Think of any three-digit number and write it down twice, side by side, such that you now have a six-digit number. Divide this six-digit number by 7. You should get no remainder. Take your answer and divide it by 11. Once again, you should get no remainder. Lastly, take your new answer and divide it by 13. Again, you should get no remainder. And what is your final answer?”
- Discuss in the group: Why does this math magic trick work?

### **Puzzle!**

- Suzy has 6 more cards than Ann. If Ann gives 2 cards to Suzy, then Suzy will have 3 times as many cards as Ann. How many cards did they both start out with?

For Thursday

### Rules for Repeating Decimals

- Background:

- When converting any given fraction to a (perhaps repeating) decimal, the number of digits under the repeat bar is solely determined by the denominator.
- Everything here is assuming that the given fraction **cannot be reduced**.
- For example, last week we saw that when 7 is in the denominator (and therefore you divide by 7), we always get 6 digits under the repeat bar.

For example:  $\frac{3}{7} = 0.428571$

- *Discover the Theorem!* With each of the below problems, create different fractions with the given denominator (always making sure that the resulting fraction can't be reduced), and then convert it to a (perhaps repeating) decimal. Your objective is to make a statement (a theorem) about how many digits must appear under the repeat bar with that particular denominator.

Note: You won't get through all of these in one group meeting. Just see how far you can get.

Example: Denominator = 7

Theorem: A fraction with 7 in the denominator converts into a decimal with 6 digits under the repeat bar.

Example: Denominator = 4

Theorem: A fraction with 4 in the denominator converts into a decimal that doesn't repeat.

Denominator = 3

Denominator = 5

Denominator = 9

Denominator = 11

Denominator = 8

Denominator = 6

Denominator = 25

*Extra challenge problems:*

Denominator = 13

Denominator = 37

Denominator = 74

Denominator = 65

Denominator = 101

Denominator = 19

### Puzzle!

- At Bob's Market, peaches cost \$1.20 per pound. If each peach weighs 6 ounces, how many peaches can you buy for \$10?

# 6<sup>th</sup> Grade Math – Sheet #22

## Do it in your head.

- 1)  $13 \cdot 4$
- 2)  $25 \cdot 4$
- 3)  $16 \cdot 3$
- 4)  $15 \cdot 4$
- 5)  $3^4$
- 6)  $2^6$
- 7)  $5^3$
- 8)  $18000 \div 2000$
- 9)  $10.9^2$
- 10)  $235,000 \cdot 4$
- 11)  $3243 - 2987$
- 12)  $8 \cdot 999.99$
- 13)  $15 \cdot 999$
- 14)  $6200 \cdot 5$
- 15)  $740 \div 5$
- 16)  $21 - 3.1$
- 17)  $0.03 \div 0.0006$
- 18)  $\sqrt{6400}$
- 19) Convert to a percent.
  - a)  $\frac{2}{5}$
  - b)  $\frac{1}{6}$
  - c) 0.94
  - d) 0.9
  - e)  $\frac{2}{3}$

20) Convert to a fraction.

- a) 0.38
- b)  $87\frac{1}{2}\%$
- c) 80%

21) Convert to a decimal.

- a)  $\frac{8}{999}$
- b) 52%
- c) 5%

## Prime Factorization.

Give the prime factorization.

22) 875

23) 309,600

Multiply the prime factorization out.

24)  $2^4 \cdot 3^2 \cdot 5^4 \cdot 11$

## Fractions, Decimals & Percents.

25) Convert to *both* a mixed number and an exact decimal.

a)  $\frac{58}{11}$

b)  $\frac{48683}{8}$

26) Convert to a fraction.

a) 0.55

b) 0.344

c) 69%

d)  $42\frac{3}{4}\%$

27) Convert to a percent.

a) 0.26

b) 0.073

c)  $\frac{13}{20}$

28) What is 25% of 32?

29) What is 62% of 850?

30) What is 5% of 12000?

31) What is  $87\frac{1}{2}\%$  of 48?

32) 130 is what percent of 260?

33) 180 is what percent of 270?

34) 59 is what percent of 150?

35) What is 35 decreased by 60%?

36) What is 58 decreased by 7%?

### **Business Math.**

37) A store is having a 60%-off sale. What is the new discounted price of a shirt that was originally marked at \$35?

38) The previous problem is the same as which other problem on this worksheet?

39) A real estate agent makes a 2% commission when he sells a house. How much money does he earn if he sells a house for \$348,000?

40) 12 ounces of cheese cost \$4.68. How much does 3 pounds of that same cheese cost?

41) John makes \$8.50/hr. How much does he earn in a 40-hour week?

42) Cathy earned \$400 and worked 32 hours last week. What is her hourly wage?