

## Exploring the World of Math

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Apportionment

1. Four regions of our country are called Northland, Eastland, Southland and Westland. The population of Northland is 67,500. The population of Eastland is 93,500. The population of Southland is 71,250. The population of Westland is 40,000. In our government, we have 70 seats in the House of Representatives.

- a. What is the standard divisor for our population?
- b. How many seats will Northland receive based upon their population?
- c. How many seats will Eastland receive based upon their population?
- d. How many seats will Southland receive based upon their population?
- e. How many seats will Westland receive based upon their population?

2. Our county has apportioned the amount of roads for region based upon the population. Our total population is 875,430 people. Using the miles of road in the county, determine the number of people in each district.

	Zone A	Zone B	Zone C	Zone D	Zone E
No of miles	152	98	68	212	87

- a. What is the population of zone A?
- b. What is the population of zone B?
- c. What is the population of zone C?
- d. What is the population of zone D?
- e. What is the population of zone E?

## Exploring the World of Math

3. Explain the Divider Chooser method where there is video game schedule for the next 24 hours. Sam likes to play the game during the 12 hours of darkness 4 times better than the daytime and he is the divider. Stacey like daytime or nighttime play equally and she is the chooser.
- How should Sam pick if he does not know Stacey's preference?
  - How should Sam pick if he does know Stacey's preference?
4. Marvin likes almond cake 4 times more than white cake. We have a single cake, one half almond and one half white. The sheet cake is \$40.
- How much is  $\frac{1}{2}$  of the white cake worth to Marvin?
  - How much is the almond cake worth to Marvin?
  - How much is  $\frac{1}{2}$  of the white cake worth to Marvin?
  - How much is a slice of  $\frac{1}{4}$  of the yellow cake and  $\frac{1}{4}$  slice of the white cake worth to Marvin?
5. England, France, Germany and Spain are bidding on four items labeled s1, s2, s3 and s4. They all want to win one item and leave for home. Their bids are:

	S1	S2	S3	S4
England	\$7 billion	\$6 billion	\$5 billion	\$3 billion
France	\$3.5 billion	\$4.5 billion	\$5.5 billion	\$6 billion
Germany	\$5 billion	\$5 billion	\$5 billion	\$5 billion
Spain	\$4 billion	\$4.5 billion	\$4 billion	\$5.2 billion

- What items are fair shares to England?
- What items are fair shares to France?
- What items are fair shares to Germany?
- What items are fair shares to Spain?
- What is the only fair division of s1, s2 and s3?