

NMP Teachers' Pre-Test 2014

1. Write a story problem for $1\frac{2}{5} \div \frac{4}{5}$, answer the problem you created, then use an area model to illustrate the operation. Explain your remainder and how that relates to your diagram as well.



2. David bought a shirt on sale that was 20% less than the original price.
- a) If the original price was \$10 more than the sales price, what was the original price?
 - b) If the sales price was \$100, how much was the original price?

3. At Camp Wigwam there are 150 campers with a 3 to 2 ratio of boys to girls. At Camp Richardson there is a 2:3 ratio of boys to girls and there are 40 boys.
- a) The two camps are getting together for a dance. What will the ratio of boys to girls be at the dance?
 - b) At another camp the ratio of boys to girls is 3:1. If 4 more girls join the camp the ratio changes to 3:2. How many children are now at this camp?

4. Write a story problem for $\frac{2}{3} \times \frac{4}{5}$, answer the problem you created, then use an area model to illustrate the operation.

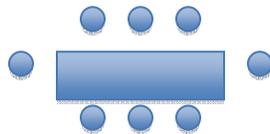


5. Cathy works two jobs. At Learners she earns \$18 per hour and 10% of each sale she makes.
- Write an expression that shows how much Cathy earns over time.
 - At Seagles she earns \$12 and hour and \$5 for each sale. Write an expression for her sales at Seagles. Explain the similarities and/or differences between the two expressions, Learner's and Seagles.

6. Explain how you would use Mental Math to solve each of the following.
- $(24 * 8) + (6 * 8)$
 - $53 - 27$
 - $40 * 99$
 - $235 + 123$
 - $220 \div 5$

7. Southwest Baking is creating a tortilla that is made of a blend of corn and rice flour. The company is not disclosing the percentage of each ingredient in the blend, but we know that the corn in the blend contains 9% protein, and the rice flour in the blend contains 6% protein. Overall, each 100 gram serving of tortilla contains 7.8 grams of protein. How much corn and how much flour is in one serving of the tortillas?

8. Tables for a wedding are being set up outside. They sit 8 people as shown below.



- a) How many people will 2 tables seat if the shorter ends are butted together.



- c) Create an expression for how many people n tables will seat.

9. Jeff had one-fourth as much money as Peggy. Ed had twice as much money as Peggy. They counted out their money and then gave \$20 to one of their friends. If they now have a total

of \$84, how much money did each initially have? Write an equation for this problem and solve it.

10. Tom and Lucy had both just run out of money when they got to start their summer jobs. For every 3 hours Tom works, he earns \$27. Lucy's earnings are listed below.

Lucy's Earnings

Time	Total Earnings
1	22
2	44
3	66
4	88

- Create equations for both Tom and Lucy's earnings given how many hours they have worked, and graph them.
- If Tom started working 10 hours before Lucy did, how long will it be until they have made the same amount of money? Show this algebraically as well as graphically.
- What is the constant of proportionality in Tom's equation and what does it mean in terms of earnings and time? Where is this found on the graph?