

MA 138 Exam Two Review Problem ANSWERS

1. Express each of the following decimal numbers as fractions in simplest form.
 - a. $\frac{3}{8}$
 - b. $\frac{62}{165}$
 - c. $\frac{1877}{900}$
2. The ratio of minority students to non-minority students in a given school is 2 to 5.
 - a. If the school has 420 non-minority students, how many minority students does it have?
168 minority students.
 - b. If the school has a total population of 420 students, how many minority students does it have?
120 students are minority students.
3. Write each number as a percent:
 - a. 12.5%
 - b. 64.7%
 - c. 218%
 - d. 0.6%
4. 2.7 hours
5. Determine each answer to the nearest tenth:
 - a. 37.6%
 - b. 8.9
 - c. 361.1
6.
 - a. The price is reduced by 45%, then tax is applied to the reduced price. Thiago is assuming that the tax is on the original price, but it's not.
 - b. He paid \$37.54.
 - c. Thiago should keep his mouth shut and enjoy the Orange Julius!
7. 12¢ for a half-pint of milk is a better deal.
8. Suppose men earn \$100. Then women earn \$75. With a 25% raise, women would actually earn \$93.75 (work it out!). You're giving a raise of 25% on top of only 75% of the men's pay. With the raise, women earn 93.75% of what men earn—it's closer to equality, but not there yet!
9. Eric has 46.7% of his pay for expenses.

10. Consider this situation: “Twelve pages of space in the school newspaper are to be shared evenly by five student organizations. How many pages of space does each organization get?
- Sharing.
 - 2.4 pages each. (Which is the same as $2\frac{2}{5}$)
11. \$1.62 per gallon
12. 21.7% of the price is tax.
13. The first recipe has more sugar per serving.
14. Laura has a *hit to at-bat* record described by the ratio: $\frac{\text{number of hits}}{\text{number of at-bats}}$ or $\frac{h}{b}$.
- If she gets a hit each of her next three times at bat,
- $\frac{h+3}{b+3}$
 - Unless her original ratio is 1:1, the ratio increases. Can you see why?
15. In 2002, the Indiana sales tax changed from 5% to 6%. On a \$1500 item:
- Old tax: \$75 New tax: \$90
 - Old total: \$1575 New total: \$1590 Difference: \$15
 - The percent increase in total cost for the \$1500 item is 0.952%. Note that “original amount” in this ratio is \$1575. The percent increase in tax paid is 20%.
 - The increase in tax paid is 20%. Going from 5 to 6 is an increase in one out of five, which is 20%. However, the total amount paid for items does not increase by 20%, it actually increases by a little less than 1%.