

Name:

Due Monday, September 22

Homework 3

Do the following problems on a separate sheet of paper.

Also **TURN IN:**

3A: 27-30, 63-66

3B: 29, 33, 45

1. Perform the following conversions. You may need the conversions on pages 101-104 of your book.
 - (a) 4 liters in gallons
 - (b) 10 kilograms in pounds
 - (c) 1 inch in yards
 - (d) 1 pound in grams
 - (e) 3 square meters in square centimeters
 - (f) **Hard:** 1 liter in cubic inches. ($1 \text{ milliliter} = 1 \text{ cm}^3$)
2. If you recall, our friend Alice went SCUBA diving in the Baltimore Harbor as a Merman named Jeffrey spied on her. Mermen are very territorial, so he decides to capture her and bring her back to Mermopolis, the Merman city.
 - (a) A merman can swim at a rate of 30 zortyls per fleech. If a zortyl is 88 feet, and a fleech is 3 minutes, how fast can a merman swim in feet per minute?
 - (b) How fast is that in miles per hour?
 - (c) Alice and Jeffrey are 300 feet apart. How many minutes will it take Jeffrey to reach Alice?
3. Jeremy brings Alice back to Mermopolis, where she is taken to see the Merking. He finds her charming and releases her. He also wants to buy her waterproof diving notebook and pen for 60 Merbucks. If the diving notebook and pen cost her \$25, what is the exchange rate (in dollars per Merbuck)?
4. The Merking's chancellor doesn't approve of the kindly Merking's decision to release Alice, and decides to secretly build an army of mutant sharks to overthrow the him. He has to pay a fisherman 100 Merbucks to catch a shark, and 200 Merbucks to catch an octopus. Each octopus provides 8 arms. The chancellor has 50,000 Merbucks in his bank account. How many mutant sharks can he make if he gives each of them 4 tentacles? What if he gives them each 8?
 - (a) Create a table listing all of the relevant information in the problem, and write down any equations you'll need to solve it.
 - (b) Solve the problem, showing all work.

5. Alice is so thankful for her release that she decides to introduce Mermopolis to the wonders of pizza. The Merking agrees to throw a pizza banquet for the city's nobility. About 100 families will be in attendance. If Merman families are about the same size as human families, and Merpeople eat the same amount as humans, how many large anchovy pizzas should she order and how much will it cost (in dollars)?