

Exercises — Word problems: percentages

3. The editor of a large publishing company reviews algebra manuscripts for possible publication. If she rejects 98.5% of the manuscripts that she reads per year, how many manuscripts does she review for publication, if she accepts 15 new manuscripts per year?

4. A chemical plant discharges diluted waste that contains 0.04% H_2S (hydrogen sulfide) into a 15,000 gallon holding container that contains 10,000 gallons of liquid containing 0.01% H_2S . The mixture is released into a stream when the concentration reaches 0.02% H_2S . How much waste is needed before the valves of the holding container are opened to allow the mixture at 0.02% to flow into the stream?

6. A group of young teenagers assemble computers in a garage. They decide to go into business by selling three different computers. One contains a single floppy drive and costs \$740.00. Another has one floppy drive and one hard drive and costs \$1080.00. A third contains two floppy drives plus a hard drive and costs \$1200.00. What does a floppy drive cost? What is the base cost? What does a hard drive cost?

8. During the Ming Dynasty in China cricket fighting was so much in vogue in the Imperial Palace that the people were permitted to pay taxes by sending crickets. Taxes were based on the amount of crops that were grown and brought to market. A bushel of rice could be sold at the market for 40 yuan. The taxes were assessed at 10% of market value; but one good fighting cricket could be offered in place of 55 yuan worth of taxes. If a peasant sold 500 bushels of rice in the market during the year, how many crickets would he need if he wished to pay 22% of his taxes in good fighting crickets?

9. Suppose that the value of a good fighting cricket is as it was in exercise 8. Also suppose that a bushel of rice sells for 40 yaun but requires 10% tax, a bushel of maize for 25 yaun requiring 12% tax and a bushel of potatoes for 12 yaun with 15% tax. If a peasant sells 200 bushels of rice, 100 bushels of maize and 50 bushels of potatoes, how many good fighting crickets will he need to pay 50% of the taxes in good fighting crickets? (According to Ming tax laws any fractional value of a cricket is equivalent to the next larger whole number of crickets.)