

Revising typical Mathematics Problems to Emphasize Quantitative Literacy

Adapted from Carpenter, K. (2005). *Numeracy Across the Curriculum*, <http://www.hstwohioregions.org/>

Traditional Mathematics	Revised to Emphasize Quantitative Literacy
<p>We are investing \$1,000 at 5% for 5 years compounded quarterly. How much money will we have at the end of the time period?</p>	<p>We are investing \$1,000 for 5 years. The bank presents several different scenarios for investing...which is best?</p> <ol style="list-style-type: none"> 5% compounded quarterly 4.875% compounded monthly 4.75% compounded daily 4.625% compounded continuously
<p>A certain machine produces 300 widgets per minute. At this rate, how long will it take the machine to produce enough widgets to fill 5 boxes if each box can contain 250 widgets?</p>	<p>Determine the time needed to fill 5 boxes of widgets containing 250 widgets each, given the rate at which widgets are produced. Describe the procedure you would use to determine this time.</p>
<p>What is the probability of drawing a blue marble from a bag containing 3 green, 5 yellow, 6 blue and 10 red?</p>	<p>How many blue marbles would you need to add to the original bag of marbles to make the probability of drawing a blue marble:</p> <ol style="list-style-type: none"> Greater than 0.25? Exactly 0.5? Exactly 0.75?
<p>Find the circumference and area of a circle with a diameter of 15 feet.</p>	<p>(True Story) Bob and Jen went to a pizza place and ordered personal pizzas, which are 6" in diameter. When told by their waiter there was no personal pizza dough left for the day (the restaurant always pre-made the dough in the morning for the entire day), they asked for a 12" pizza, with one half containing Bob's pizza, and one-half containing Jen's, for the same price as the two personal pizzas. The waiter agreed. How much more pizza (in square inches and by percentage) did Bob and Jen get by doing this?</p>
<p>Find the volume of a rectangular prism that is 5 feet long, 8.5 feet wide, and 10 feet long.</p>	<p>You are looking at purchasing a freezer. Dean's discount store sells two kinds of freezers. Freezer A costs \$315 and measures 2 ft by 2.5 ft by 3.5 ft. Freezer B costs \$364 and measures 2 ft by 3 ft by 3.5. Which freezer is a better buy (<u>based solely on cost per ft³</u>)? By how much (per cubic foot)?</p>
<p>Solve for x:</p> $3x + 4 = 2x + 10$	<p>David was offered a temp job that would take two weeks (10 days) to complete. The boss offered David two choices for his pay: he could receive a \$400 signing bonus and get paid \$300 a day, or receive a \$1000 signing bonus and get paid \$200 a day.</p> <ol style="list-style-type: none"> Which form of payment should David choose? What if the job would take only one week (5 days)? Is there a number of days worked where it wouldn't matter what payment David chose? If so, what is that number of days? Explain in your own words which payment method should be chosen, based on the number of days worked.