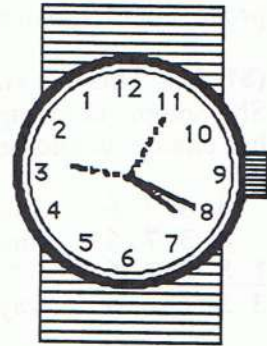


Commentary

Jupiter, VII

1. **(marble bag)** The chance of drawing a blue marble is $\frac{1}{3}$; the chance of drawing a weekend day is $\frac{2}{7}$. We must compare these fractions to see which is larger. Finding a common denominator (21) allows us to compare the fractions by comparing the numerators. $\frac{1}{3}$ is $\frac{7}{21}$, and $\frac{2}{7}$ is $\frac{6}{21}$, and thus $\frac{1}{3}$ is greater than $\frac{2}{7}$. Another way to compare the fractions is to use a calculator and change both fractions into decimals, and compare the decimals.
2. **(2000 years)** Many students will think you must multiply 4 and 2000, but the problem doesn't call for any computation if you think carefully about the situation.
3. **(25)** Students can use grid paper to make the rectangles that have 20 as a perimeter. The one with the largest area can then be found by counting unit squares.
4. **(To get back fewer coins)** Many people use a method like that mentioned to avoid carrying extra coins around in their pockets.
5. **(Juan is 15, Derrick is 5, Tyrone is 10)** A suggested strategy is to use *guess-check-revise* by guessing the youngest person's age, and doubling and tripling that amount to get the other ages, adding to see if the sum is 30. If not, revise the youngest person's age appropriately.
6. **(2:38; 2:57; 3:20; 3:48)** Students will have to either count backwards to get each new time, or subtract. Subtraction involves subtracting across non-base ten numerals.
7. **(See watch to the right.)** The time shown is 2:55, and adding 4:45 to that gives a time of 7:40. Showing 7:40 will be a challenge for many students, on this watch.



8. **(1/10)** A quart is 2 pints, so 5 quarts is 10 pints. One pint is then $\frac{1}{10}$ of 5 quarts.
9. **(a. answers will vary; b. answers will vary.)** Whatever a student writes in for (a), use a calculator to find 70% of that number by multiplication. Be lenient in checking accuracy -- give credit for being within one pound of the right answer for (b). Students will employ a variety of methods for finding 70% of their weight, if they don't use a calculator. Some, for example, might reason and take 7 out of every ten pounds they weigh, and then add on some extra for the pounds over a multiple of ten. Others might find 50% or 75% as those are intuitive numbers to work with ($\frac{1}{2}$ and $\frac{3}{4}$) for many weights, and then adjust their answer because 70% isn't exactly 50% or 75%.