Commentary
Mars, XXIII

1. $\begin{array}{r} 2\ 5\ 4 \\ +\ 4\ 6\ 7 \\ \hline 7\ 2\ 1 \end{array}$ $\begin{array}{r} 7\ 3\ 1 \\ -\ 6\ 4\ 5 \\ \hline 8\ 6 \end{array}$ The student can use knowledge of addition and subtraction facts and regrouping to solve the problems. Some students may need several tries.

2. **(5)** Students might count by tens to 40 or 50. If only 4 boxes were used, 6 disks would not be protected, so the 5th box is necessary.

3. $(\frac{4}{12}$ or $\frac{1}{3}$ - white; $\frac{5}{12}$ - striped; $\frac{3}{12}$ or $\frac{1}{4}$ - shaded) The total number of stars is need for this part-whole situation. Then the number of each kind of star can be counted and compared to the whole group.

4. **(5 bicycles and 1 tricycle or 2 bicycles and 3 tricycles)** The student might use an organized *guess-and-check* strategy, as shown below.

$$2\,b\ +\ 3\,t = 4 + 9 = 13 \text{ wheels}\surd$$
$$3\,b\ +\ 2\,t = 6 + 2 = 12 \text{ wheels}$$
$$4\,b\ +\ 2\,t = 8 + 6 = 14 \text{ wheels}$$
$$5\,b\ +\ 2\,t = 10 + 6 = 16 \text{ wheels}$$
$$5\,b\ +\ 1\,t = 10 + 3 = 13 \text{ wheels}\surd$$

5. **(The answer not given for #4 is called for here.)** The purpose of this extension to the previous problem is to show students that many times there is more than one solution to a mathematics problem.

6. **(5, 2, 4, 1, 3)** The student might actually write someone a letter, and check the steps.

7. **(34, 35)** The student might use an "educated" *guess-and-check* strategy, reasoning that half of 60 is 30, so the page numbers must be around 30. The numbers must also be consecutive. Then $30 + 31$, $31 + 32$, $32 + 33$, $33 + 34$, and $34 + 35$ can be tried until the numbers add to 69 $(34 + 35)$.

Some students might actually thumb through a book, until they find page numbers that sum to 69. If so, they might notice an interesting pattern in that the odd numbers are always on the right, and the even numbers always on the left, in any book they pick up. This is because books always begin with page 1 on the right-hand side.

8. **(See the graph)**