31. How many pigs and ducks are in the pen if there is a total of 17 heads and 50 feet?

32. Have a student add 3 dates from a vertical column on a calendar and tell you the answer. You can then tell the student the three dates selected.

Variation: Have each student select and then total his/her own 3 dates, and you can tell each student the numbers in their list.

33. NOTE TO TEACHER: Read aloud one sentence at a time. Students will compute, then wait for the next sentence.

Take the number of fingers and thumbs on one hand. Multiply that by the number of nickels in a quarter. Add the number of players on a baseball team to your answer. (If necessary, explain that you mean the number of active players on the non-batting team.) Now add the number of centimeters in a meter to that answer.

ANSWERS

31. 8 pigs and 9 ducks. Students may draw pictures (diagrams), guess and test, or use formulas to solve.

P = pigs   D = ducks

$$P + D = 17$$

$$P = 17 - D$$

4P + 2D = 50 because pigs have 4 feet
and ducks have 2 feet.

$$4(17 - D) + 2D = 50$$

$$68 - 4D + 2D = 50$$

$$.68 - 2D = 50$$

$$-2D = -18$$

$$D = 9$$

$$P = 17 - D$$

$$P = 17 - 9$$

$$9 = 17 - D$$

$$D = 8$$

Note: Your students will probably not use the algebraic approach to solve this problem because they do not have those skills. However, the thought process involved is the same, even without the variable. Doing problems like this is a critical first step toward developing those necessary algebra skills.

32. Varies. Divide the sum by 3. The result will be the center date. Subtract 7 from the result to get the first date, and add 7 to the result to get the third date.

This is a good example of a multistep problem that students need to become efficient at solving.

Challenging the students to figure out how you are doing this problem will develop their problem-solving skills.

33. 134. (5 x 5) + 9 + 100 = 134