Name _____ Date _____ Class _____

Additional Practice

In Problem 2.3, you found the lengths of line segments drawn on 5-dot-by-5-dot grids. Some of those lengths were written as square roots, such as $\sqrt{2}$. When you enter $\sqrt{2}$ in your calculator, the result is a decimal with a value of approximately 1.4.

For Exercises 1–6, find the approximate value for the given length to the nearest tenth.

1. $\sqrt{5}$

2. $\sqrt{13}$

3. $\sqrt{20}$

4. $\sqrt{17}$

5. $\sqrt{2} + \sqrt{5}$

6. $\sqrt{8} + 6 + \sqrt{10}$

7. Is $\sqrt{8} + \sqrt{10}$ the same as $\sqrt{8 + 10}$? Explain your answer in two ways:

   **a.** Use your calculator to help give a numerical argument.

   b. Use a grid and lengths of line segments to give a geometric argument.

Additional Practice *(continued)*

**For Exercises 8–10, find the perimeter of each figure. Express the perimeter in
two ways: as the sum of a whole number and square roots, and as a single value
after using decimal approximations to the nearest tenth for the square roots. An
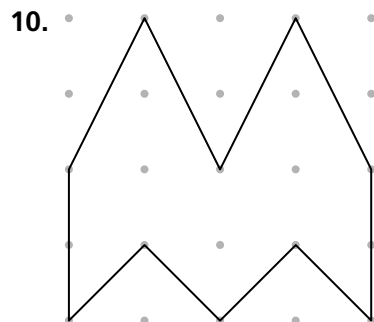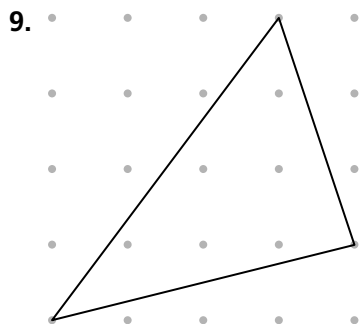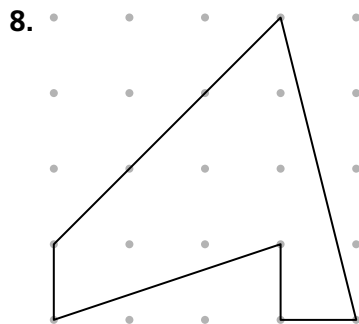example is done for you.**
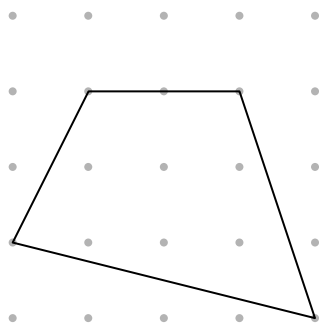
The perimeter of this figure is
$2 + \sqrt{10} + \sqrt{17} + \sqrt{5} \approx$
$2 + 3.2 + 4.1 + 2.2 =$
11.5 units

8.

9.

10.

Additional Practice *(continued)*

11. For each number sentence below, decide if it is true (T) or false (F):
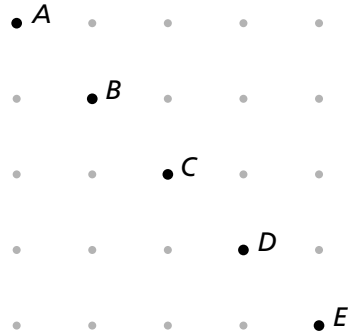
a. $7 = \sqrt{49}$

b. $7 = -\sqrt{49}$

c. $-7 = \sqrt{49}$

d. $-7 = -\sqrt{49}$

12. Points A, B, C, D, and E are shown on the grid below:

Using these 5 points only, list all line segments which have the following lengths:

$\sqrt{2}$

$2\sqrt{2}$

$3\sqrt{2}$

$4\sqrt{2}$

$5\sqrt{2}$

13. List all the whole numbers that could be substituted for x so that the expression is true.

a. $4 < \sqrt{x} < 5$

b. $8 < \sqrt{x} < 9$

c. $0 < \sqrt{x} < 1$