PRACTICE

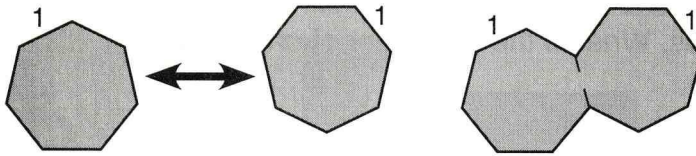**51.** Two regular heptagons with side length 1 are attached as shown. What is the perimeter of the shape they create?
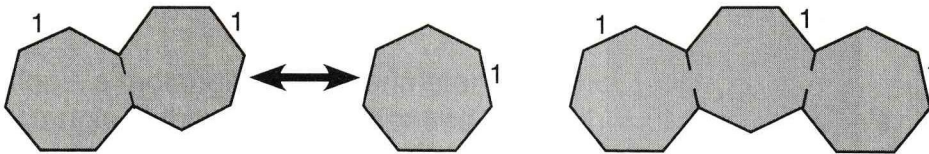
51. _____

52. Grogg suggests for Problem 51, "The new shape is made from two heptagons. To find its perimeter, we can just double the perimeter of one heptagon." Why doesn't this work?

53. A third heptagon is attached as shown. What is the perimeter of the new shape?

53. _____

54. We attach a fourth regular heptagon to the end of our 3-heptagon shape above. How much **greater** is the perimeter of the 4-heptagon shape than the perimeter of the 3-heptagon shape?

54. _____

55. Eight regular heptagons with side length 1 are attached in the same way that we attached the heptagons in the problems above. What is the perimeter of the shape they create?
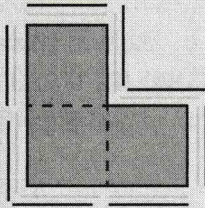
55. _____

Beast Academy Practice 3A

EXAMPLE | Three squares are attached as shown. Each square has a perimeter of 3. What is the perimeter of the L-shape they make?

In these problems, we don't need to know the length of each side to find the perimeter of the shape.
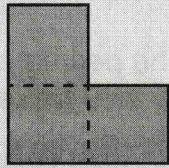
Each square has 4 sides. The perimeter of the L-shape is made of 8 sides of these squares.

So, we can double the perimeter of the square to find the perimeter of the L-shape. Since the perimeter of each square is 3, the perimeter of the L-shape is $3+3=$ **6**.
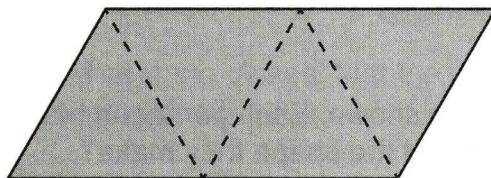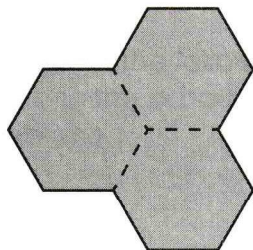
PRACTICE

56. Four equilateral triangles are arranged as shown. Each triangle has a perimeter of 4. What is the perimeter of the quadrilateral they make?
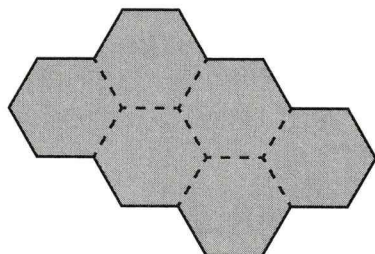
56. _____

57. Three regular hexagons are arranged as shown. Each hexagon has a perimeter of 8. What is the perimeter of the larger shape they make?
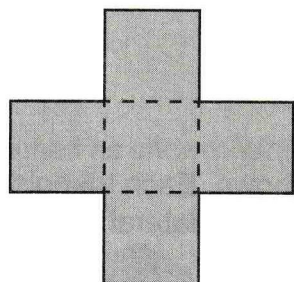
57. _____

58. Six regular hexagons are arranged as shown. The perimeter of each hexagon is 5. What is the perimeter of the shape they make?
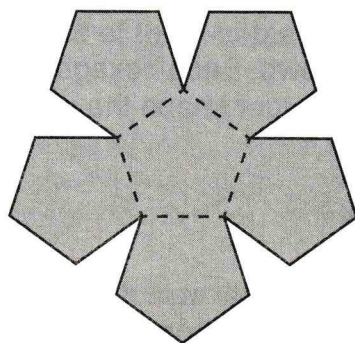
58. _____

59. Five squares are arranged as shown. Each square has a perimeter of 7. What is the perimeter of the shape they make?

59. _____

60. Six regular pentagons are arranged as shown. Each pentagon has a perimeter of 12. What is the perimeter of the shape they make?

60. _____

PRACTICE

Use the following for Problems 61 and 62:
Grogg and Alex live 7 miles from each other.
Alex lives 5 miles from the park.

61. What is the greatest possible distance from Grogg's house to the park?

61. _____

62. What is the shortest possible distance from Grogg's house to the park?

62. _____

Use the following for Problems 63-65:
The flagpole at Beast Academy is 24 feet tall.
It stands 40 feet from the main entrance to the school.
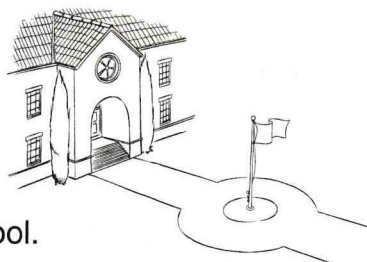
63. If the flagpole falls, what is the closest that the top of the pole could land from the school entrance?

63. _____

64. If the flagpole falls, what is the farthest that the top of the pole could land from the school entrance?

64. _____

65. After the flagpole falls, which of the following *could* be the distance from the top of the flagpole to the school entrance?
(You may circle more than one.)

10 feet   30 feet   50 feet   70 feet
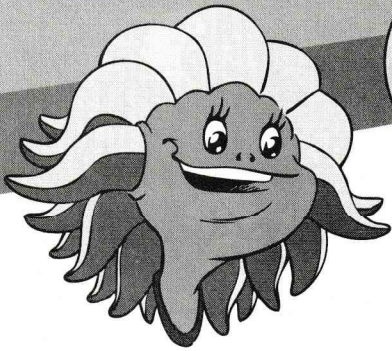
The lengths of the two short sides of a triangle must add up to more than the length of the long side. This is called the Triangle Inequality.

Any three numbers that satisfy the Triangle Inequality can be used as the side lengths of a triangle.

PRACTICE | Use the following for the problems below:
Captain Kraken's pirate ship has a triangular flag. One side of the triangle is 4 feet long, and another side is 7 feet long.

66. Fill in the blanks:

The third side of Kraken's flag must be longer than _____ feet but shorter than _____ feet.

67. Which of the following *could* be the length of the third side of Kraken's flag? (You may circle more than one.)

2 feet   4 feet   6 feet   8 feet   10 feet   12 feet

68. Which of the following *could* be the perimeter of Kraken's flag? (You may circle more than one.)

13 feet   16 feet   19 feet   22 feet   24 feet   25 feet

69. Each pole below is labeled with its length. Circle the groups of three poles that can be attached at the ends to form a triangle.

ⓐ 3 3 4

ⓑ 3 4 1

ⓒ 3 5 1

ⓓ 5 2 2

ⓔ 5 5 1

ⓕ 4 5 3
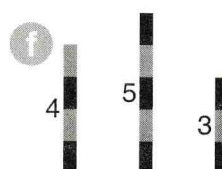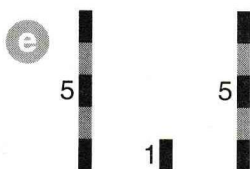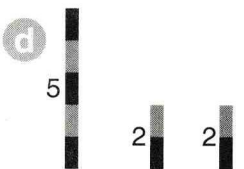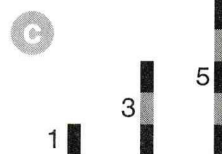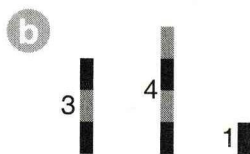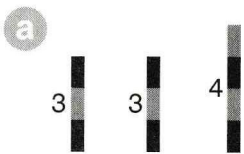
70. ★ What is the perimeter of an isosceles triangle with sides of length 3 and 7?

70. _____