Are you ready for Beast Academy 4A?

Before beginning Beast Academy 4A, a student should understand the basics of perimeter and area, multiplication and division, measurement, fractions, and estimation.

A student ready for Beast Academy 4A should be able to answer at least 10 of the 14 problems below correctly.

Step 1. The student should try to answer every question without a calculator and without help.

Step 2. Check the student's answers using the solutions at the end of this document.

Step 3. The student should be given a second chance on problems that he or she answered incorrectly.

Compute.

1. $27 \times 6 = $ _____

2. $199 \times 80 = $ _____

Compute the quotient and remainder for each division expression.

3. $65 \div 11$

3. Quotient: _____ Remainder: _____

4. $196 \div 9$

4. Quotient: _____ Remainder: _____

5. A regular hexagon has a perimeter of 108 inches and side length n inches. What is the value of n?

5. $n = $ _____

6. Find the perimeter and area of the rectilinear figure below.

6. Perimeter: _____

Area: _____

12 ft

4 ft   4 ft

2 ft   5 ft

3 ft
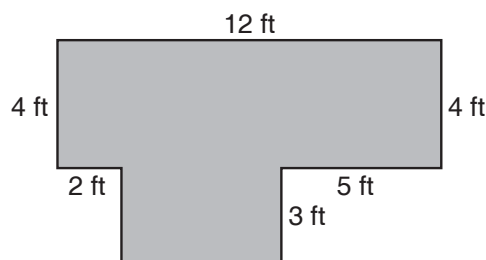
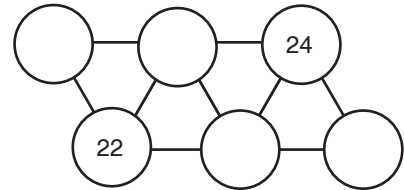**7.** How many square feet are there in 2 square yards?

7. _____

8. Compute $(85 \times 85) - (84 \times 84)$.

8. _____

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9. Place each of the four numbers below in one of the empty circles in the diagram on the right so that no two connected circles have a sum that has remainder 0 when divided by 5.
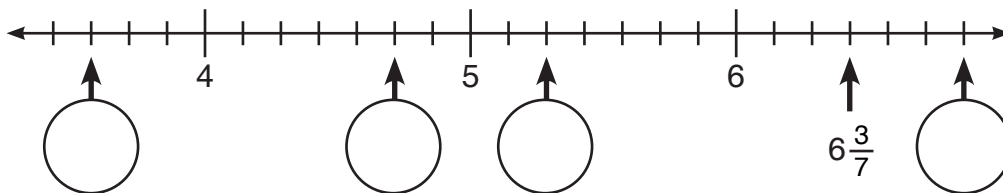
Missing Numbers: 26, 27, 28, 29

10. Connect each expression on the left to an equal value on the right by estimating the value of each product.

13×57 ●   ● 2,001

23×87 ●   ● 1,331

11×121 ●   ● 741

11. Label each value on the number line below with a mixed number in simplest form.
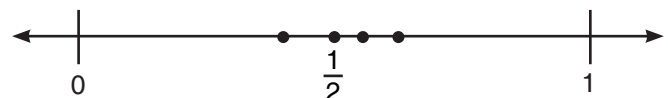
$6\frac{3}{7}$

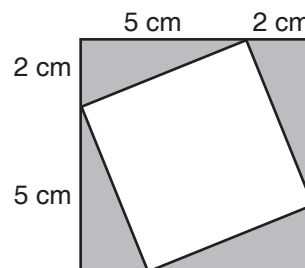**12.** The fraction $\frac{25}{9}$ is closest to which whole number?   **12.** _____

13. Use the given fractions to label the three unlabled points on the number line below:

Fractions: $\frac{5}{9}, \frac{5}{8}, \frac{2}{5}$

0          $\frac{1}{2}$ 1

14. Four congruent right triangles are arranged as shown to form a large square, with a smaller tilted square within. What is the area of the tilted square?

5 cm   2 cm

2 cm

5 cm

14. _____ square cm