Name _____ Class _____ Date _____

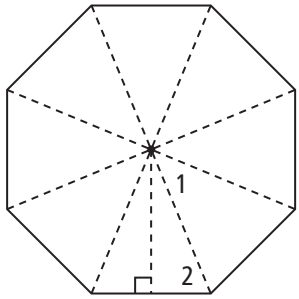
10-3 Standardized Test Prep

Areas of Regular Polygons

Multiple Choice

For Exercises 1–6, choose the correct letter.

For Exercises 1 and 2, use the diagram at the right.



1. The figure at the right is a regular octagon with radii and an apothem drawn. What is $m\angle 1$?

(A) 22.5 (C) 60

(B) 45 (D) 67.5

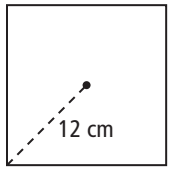
2. What is $m\angle 2$?

(F) 22.5 (G) 45 (H) 60 (I) 67.5

3. A regular pentagon has an apothem of 3.2 m and an area of 37.2 m^2. What is the length of one side of the pentagon?

(A) 3.96 m (B) 4.65 m (C) 11.875 m (D) 23.75 m

4. What is the area of the square at the right?



(F) 16.97 cm^2 (H) 144 cm^2

(G) 72 cm^2 (I) 288 cm^2

5. A regular hexagon has perimeter 60 in. What is the hexagon's area?

(A) $75\sqrt{3}$ $in.^2$ (B) $150\sqrt{3}$ $in.^2$ (C) $300\sqrt{3}$ $in.^2$ (D) $600\sqrt{3}$ $in.^2$

6. For which regular polygon can you *not* use special triangles to find the apothem?

(F) pentagon (G) triangle (H) square (I) hexagon

Short Response

7. The area of an equilateral triangle is $108\sqrt{3}$ ft^2. What is the length of a side and the apothem in simplest radical form? Draw a diagram and show your work.