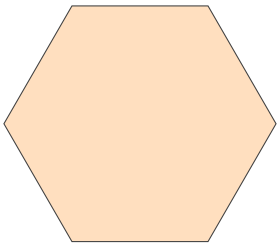
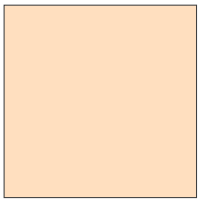
Regular polygon properties

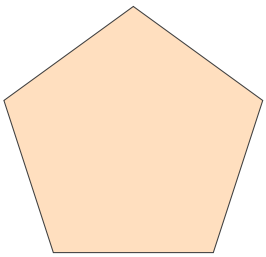
Name _____ **Date** _____

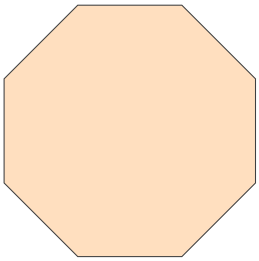
Find the following characteristics of a regular polygon:

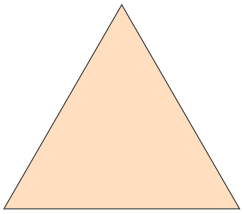
a) How many sides does a figure have?
b) How many different diagonals does a figure have?
c) What is the minimal rotation angle in degrees preserving a figure?
d) If a side of a polygon equals 1 m, calculate circumference (P) and area (S)
e) Recognize a figure

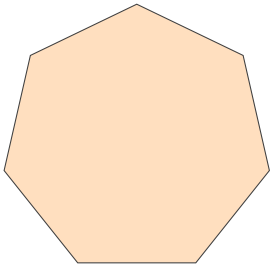
(1) 

(2) 

(3) 

(4) 

(5) 

(6) 

Answers

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e) Recognize a figure

(1)	a) 6;	b) 9;	c) 60;	c) $P = 6,\ S = \frac{3\sqrt{3}}{2}$	d) hexagon
(2)	a) 4;	b) 2;	c) 90;	c) $P = 4,\ S = 1;$	d) square
(3)	a) 5;	b) 5;	c) 72;	c) $P = 5,\ S = \frac{5}{4\sqrt{5-2\sqrt{5}}}$	d) pentagon
(4)	a) 8;	b) 20;	c) 45;	c) $P = 8,\ S = 2\cos\frac{\pi}{8}$	d) octagon
(5)	a) 3;	b) 0;	c) 120;	c) $P = 3,\ S = \frac{\sqrt{3}}{4};$	d) triangle
(6)	a) 7;	b) 14;	c) 51.4;	c) $P = 7,\ S = \frac{7}{4}\cos\frac{\pi}{7}$	d) heptagon