Geometry Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Worksheet 3.4 Day 1 Date: \_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_

Directions: Find the values of the variables for each polygon. Each is a regular polygon.

x°

y°

n°

**b°**

a°

1. 2. 3.

X = \_\_\_\_\_, y = \_\_\_\_\_ n = \_\_\_\_\_ a = \_\_\_\_\_, b = \_\_\_\_\_

Directions: Find the missing angle measures.

B

A

L

P

N

M

H

G

I

J

K

F

4. 5. 6.

48°

71°

93°

150°

124°

91°

x°

90°

x°

130°

160°

E

112°

x°

80°

100°

C

D

C

B

A

43°

G

H

J

K

D

F

E

S

7. 8. 9.

54°

130°

x°

x°

110°

128°

147°

135°

T

R

97°

130°

90°

x°

135°

118°

Q  
Q

U

10. Find the sum of the interior angles of a pentagon.

11. Find the sum of the interior angles of a nonagon.

12. Find the sum of the exterior angles of a decagon.

13. Find the sum of the exterior angles of a 24-gon.

14. Find the measure of each exterior angle of a regular dodecagon.

15. Find the measure of each exterior angles of a regular pentagon.

16. Find the measure of each interior angle of a regular octagon.

17. Find the measure of each interior angle of a regular decagon.

18. Name the polygon if the sum of the interior angles is 1980.

19. Name the polygon if the sum of the interior angles is 1080.

20. Name the regular polygon if each exterior angle is 72.

21. Name the regular polygon is each exterior angle is 30.

22. Name the regular polygon if each interior angle is 160.

23. Name the regular polygon if each interior angle is 176.4.