Lengths & Areas of Circles

**CORE STANDARDS**

HSG.C.B.5

LESSON

**6-2**

OBJECTIVE **1. SWBAT find measures of lengths and areas in circles.**

*n*

*q*

Power of the Point Theorem

If two chords intersect in a

circle, the products of the

lengths of the partitions

of each chord are equal.

*nm* = *pq*

*p*

*m*

NOTES

Circumference of a Circle



Area of a Circle



*θ*

*r*

*L*

Arclength



Area of a Sector



*θ*

*r*

EXAMPLES Find the following lengths & areas. Rounds answers to nearest hundredth, if necessary.

**1.** Find the area and circumference of a **2.** Find the area and circumference of a

circle with *r* = 9*cm*. circle with *d* = 12*m*.

**3.** Find the radius of a circle with *C* = 50*cm*. **4.**  Find the radius of a circle with *A* = 95*cm*2.

**5.** Find the arclength of  and the area **6.** Find the arclength of  and the area

of the shaded sector. of the shaded sector.

9*in*

*B*

*A*

72

13*ft*

*B*

*A*

225

12*cm*

*B*

*A*

10*cm*

*E*

*D*

*C*

4*cm*

*G*

*F*

*H*

18*cm*

20*cm*

**7.** Find the length of . **8.** *AB* = ?

*BE* = ?

4*cm*

*B*

*A*

5*cm*

*E*

*D*

*C*

6*cm*

PRACTICE **6-2** NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[SHOW YOUR WORK]

Fill in each empty cell in the tables below. Round answers to the nearest hundredth, if necessary.



2



30*m*



2

2

Find the area of each shaded sector. Round to the nearest hundredth.

5*in*

95

1. 4. 5.

6*in*

54

90

4*in*

46

Find each unknown segment length.

1. *BE* = ? 7. *BE* = ? 8. *BC* = ?

*BG* = ? *AC* = ?

8*in*

4*in*

*A*

*B*

*C*

*D*

3*in*

*E*

*CI* = ?

10*cm*

*B*

*A*

6*cm*

*E*

*D*

*C*

5*cm*

*G*

*F*

*H*

11*cm*

8*cm*

12*cm*

*B*

*A*

15*cm*

*E*

*D*

*C*

8*cm*

*G*

*F*

*H*

20*cm*

*I*

9*cm*

7.4*cm*