

19) $(2, 4)$
 $(10, -8)$

 $12, -4 \rightarrow (6, -2)$ $h \quad k$
 $(x-6)^2 + (y+2)^2 = 52$

$$(x-h)^2 + (y-k)^2 = r^2$$

$$(2-6)^2 + (4+2)^2 = r^2$$

$$(-4)^2 + (6)^2 = r^2$$

$$r^2 = 16 + 36 = \underline{\underline{52}}$$

20) $A = \pi r^2 = 25\pi$
 $r^2 = 25$
 $r = 5$

$C = 2\pi r = 2\pi \cdot 5 = \boxed{10\pi}$
 $= \boxed{31.4}$

21) Arc Length = $\frac{\theta}{360} \cdot 2\pi r$

$$30 = \frac{70}{360} \cdot 2\pi r$$

$$30 \cdot 360 = 140\pi \cdot r$$

$$r = \frac{30 \cdot 360}{140\pi}$$

$$r = \boxed{24.6}$$