

$$\frac{1.52}{6}$$

$$(S.S) \triangle ABE \sim \triangle CBA \quad \left. \begin{array}{l} \text{1) } \angle B \text{ is common} \\ \text{2) } \angle A = \angle C \end{array} \right\} \Rightarrow \frac{AB}{CB} = \frac{BE}{BA}$$

$$(S.S) \triangle DFC \sim \triangle DEG \quad \left. \begin{array}{l} \angle F = \angle D \\ \angle C = \angle E \end{array} \right\} \Rightarrow \frac{DF}{DE} = \frac{DC}{EG}$$

$$AB^2 = BC \cdot BE \quad \text{algebraically} \quad \underline{2}$$

$$36 = 3(6 + ED) \rightarrow ED = 6$$

$$FD \cdot DG = CD \cdot DE \quad \text{algebraically} \quad \underline{3}$$

$$(R-2)(R+2) = 3 \cdot 6$$

$$R^2 = 22$$

$$S = \pi R^2 = 22\pi$$