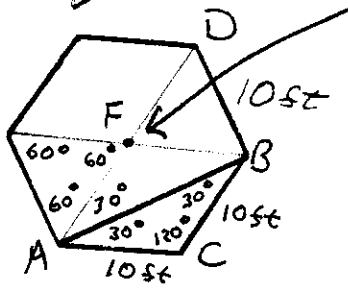
200603151106 Name Key

Given a regular hexagon with a side of 10 ft.



$\text{Angle} = \frac{360}{6} = 60°$

All 3 Angles are 60°

Determine

Distance AB = ____

Distance AD = 20

Angle A = 30

Angle B = 30

Angle C = 120

Distance FB = 10

$\triangle BDF$ is equilateral

$\therefore BD = DF = BF$

$DA = DF + AF = 10 + 10 = 20$

$c^2 = a^2 + b^2 - 2ab\cos C$

$= 10^2 + 10^2 - 2(10)(10)(\cos 120)$

$= 100 + 100 - 200(-.5)$

$= 200 + 100$

$c^2 = 300$

$c = \sqrt{300}$

$= \sqrt{3}\sqrt{100}$

$= 10\sqrt{3}$

$= 10(1.732)$

$c = 17.32$ ft