



Extend ME to intersect AB extended at F. Draw CG parallel with MEF to intersect ABF extended at G.

Angle FBE =  $180^\circ - 2\cdot\phi$ . Angle DBE =  $\phi$ , so angle BEF =  $\phi$  and therefore angle BFE =  $\phi$ , making triangle BFE isosceles and triangle BGC also isosceles.

With M the midpoint of AC, F is therefore the midpoint of AG and  $AF = FG$ .

$$BC = BG = FG + BF = AF + BF$$

$$AB = AF - BF$$

$$AB - BC = AF - BF - (AF + BF)$$

$$400 - 500 = -2\cdot BF$$

$$BF = 50 = BE$$