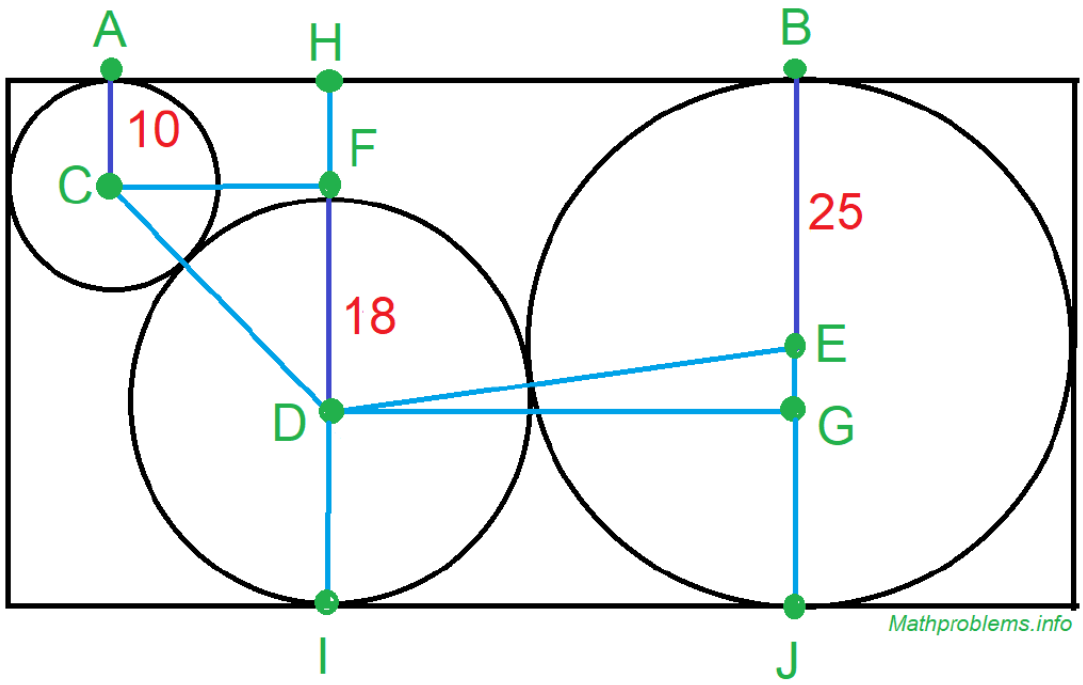

Let C, D, and E be the centers of the three circles.

Let F be the point directly to the right of C.

Since the diameter is twice the radius, BJ = 50

HI = BJ = 50

HF = AC = 10

DI = 18

DF = 50 - 10 - 18 = 22

CD = AC + DF = 10 + 18 = 28

By the Pythagorean Theorem, CF = $\sqrt{\ 28^2\ \ -22^2\ }$ = $\sqrt{300}$ = 10 $\sqrt{3}$

AH = CF = 10 $\sqrt{3}$

EG = 50 - 25 - 18 = 7

DE = 18 + 25 = 43

By the Pythagorean Theorem, DG = $\sqrt{\ 43^2\ \ -7^2\ }$ = $\sqrt{1800}$ = 30 $\sqrt{2}$

AB = AH + DG = 10 $\sqrt{3}$ + 30 $\sqrt{2}$ =~ 17.3205 + 37.4142 = 48.7347