Two wires are used to suspend a sign that weighs 500 N. The two wires make an angle of 100° between each other. If each wire is exerting an equal amount of force how much force does each wire exert?

Answer 1
Answer:

The **force** each wire exert will be "**390.62 N**".

The given values are:

Weight,

- mg = 500 N

Angle,

- ? = 100°

As we know,

The **sum of vertical forces** = 0

then,

? \Sigma Fy = 0

Now,

? F Cos (50) + F Cos (50) = mg

By substituting the value, we get

?

$$2F\cos(50) = 500$$

?

$$F = (500)/(2\cos(50))$$

?

$$= (500)/(2(0.64))$$

?

$$= 390.62\ N$$

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