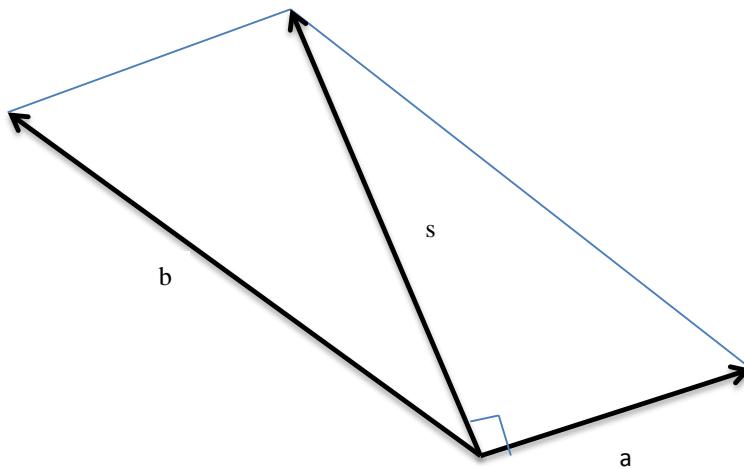The resultant of two vectors A and B is perpendicular to vector A and has the magnitude 24 cm. If the sum of magnitudes of vector A and vector B is 32 cm, then their magnitudes are

1) 5 cm, 27 cm

2) 7 cm ,25 cm

3) 14 cm,18 cm

4) 10 cm,22 cm

From picture obviously:

$$a^2 + s^2 = b^2$$

the sum of magnitudes of vector A and vector B is 32 cm, therefore:

$$a = 32 - b$$

Substituting to first equation:

$$b^2 - (32 - b)^2 - 24^2 = 0$$

$$2 * 32b = 32^2 + 24^2$$

Then, b and a equals:

$$b = \frac{32^2 + 24^2}{2 * 32} = 25$$

$$a = 32 - 25 = 7$$

Answer: 2) 7 cm ,25 cm