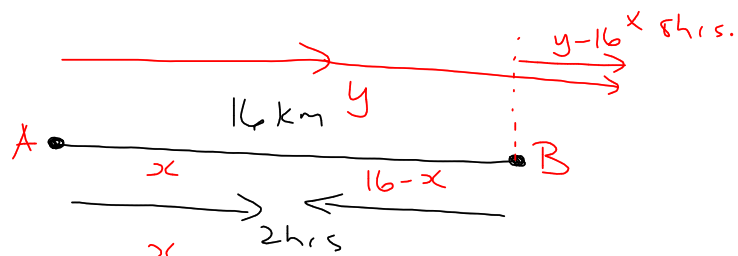


(6h)



$$S_A = \frac{x}{2}$$
$$= \frac{y}{8}$$

$$S_B = \frac{16-x}{2}$$
$$= \frac{y-16}{8}$$

$$\frac{x}{2} = \frac{y}{8}$$

$$y = 4x$$

$$\frac{16-x}{2} = \frac{y-16}{8}$$

$$\frac{16-x}{2} = \frac{4x-16}{8}$$

$$= \frac{x-4}{2}$$

$$16-x = x-4$$

$$2x = 20$$

$\therefore$  A is walking at 5 km/h  $x=10$   $\therefore y=40$   
B is walking at 3 km/h

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$$12x^2 - 4xy + 11y^2 = 64$$

$$16x^2 - 9xy + 11y^2 = 78$$

$$12x^2 - 4mx^2 + 11m^2x^2 = 64$$

$$16x^2 - 9mx^2 + 11m^2x^2 = 78$$

$$x^2(12 - 4m + 11m^2) = 64$$

$$x^2(16 - 9m + 11m^2) = 78$$

$$\therefore \frac{64}{12 - 4m + 11m^2} = \frac{78}{16 - 9m + 11m^2}$$

$$704m^2 - 576m + 1024 = 858m^2 - 312m + 936$$

$$154m^2 + 264m - 88 = 0$$

$$7m^2 + 12m - 4 = 0$$

$$(7m - 2)(m + 2) = 0$$

$$m = \frac{2}{7} \text{ or } m = -2$$

$$m = \frac{2}{7}$$

$$x^2 = \frac{64}{12 - 4m + 11m^2}$$
$$= \frac{64}{12 - 4\left(\frac{2}{7}\right) + 11\left(\frac{2}{7}\right)^2}$$

$$= \frac{49}{9}$$

$$x = \pm \frac{7}{3}$$

$$y = mx$$
$$= \frac{2}{7}x \pm \frac{2}{3}$$
$$= \pm \frac{2}{3}$$

$$\therefore x = \frac{7}{3}, y = \frac{2}{3} \text{ or } x = -\frac{7}{3}, y = \frac{2}{3}$$

$$m = -2$$

$$x^2 = \frac{64}{12 - 4m + 11m^2}$$
$$= \frac{64}{12 - 4(-2) + 11(-2)^2}$$

$$= 1$$

$$x = \pm 1$$

$$y = mx$$
$$y = -2x \pm 1$$
$$y = \mp 2$$

$$, x = 1, y = -2, x = -1, y = 2$$