

March 27<sup>th</sup>

A man ran a kilometre in four minutes with the wind at his back, but it took him five minutes to return against the wind.

How long would it take him to run a kilometre with no wind?

---

Speed = distance  $\div$  time

If his running speed is  $x$  m/s, and the wind speed is  $y$  m/s

With the wind:

$$x + y = 1000 \div 240 = \frac{25}{6} \text{ m/s}$$

$$x - y = 1000 \div 300 = \frac{10}{3} \text{ m/s}$$

Adding gives

$$2x = 7.5 \text{ m/s}$$

So speed without the wind is 3.75m/s

$$\text{Time} = \text{distance} \div \text{speed} = 1000 \div 3.75$$

Therefore it will take **266.666...seconds** or **4.4444 mins**