

March 11th

$$\text{Given } x + y = 5 \quad \text{and} \quad x^2 + 3xy + 2y^2 = 40$$

Find the value of $2x + 4y$

Notice that...

$$(x + y)(x + 2y) = x^2 + 2xy + xy + 2y^2 = \text{LHS}$$

Therefore $5(x + 2y) = 40$

Hence $x + 2y = 8$

So **$2x + 4y = 16$**