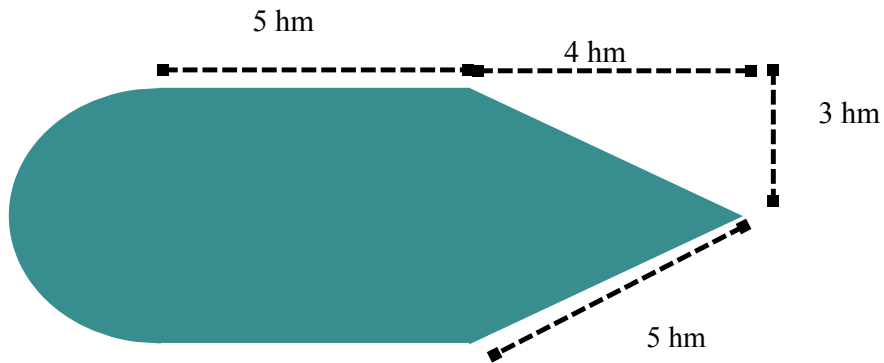
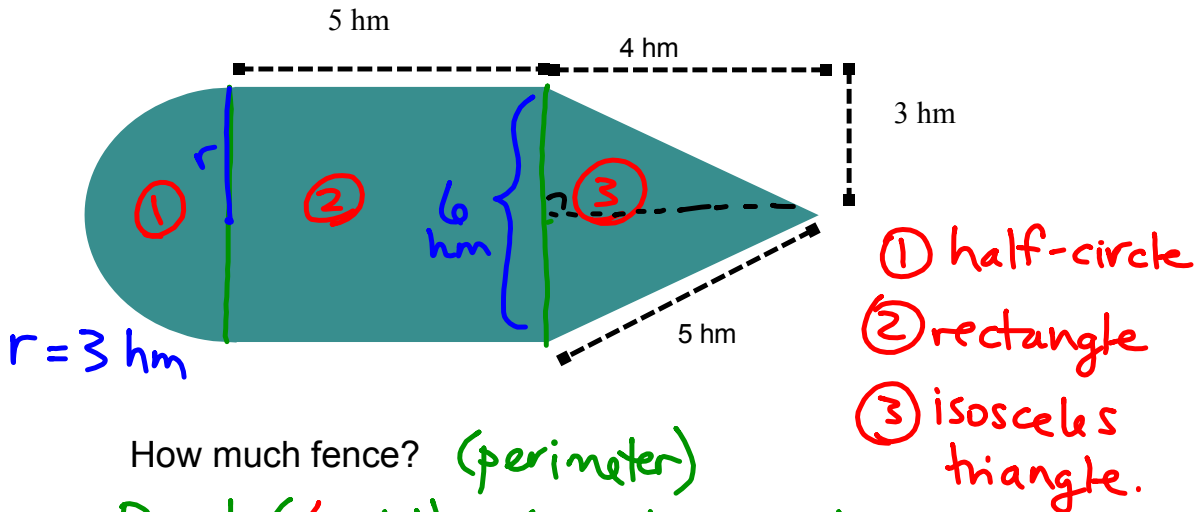


Challenge #17

This is an aerial view of the new Archimedes Activity Arena. Determine how much fence it will take to enclose the entire area and how much Sport Court® must be purchased to cover the surface.



Challenge #17 solution



How much fence? (perimeter)

$$P = \frac{1}{2}(2\pi(3)) + (5+5) + (5+5)$$

$$= \boxed{3\pi + 20 \text{ hm}} \approx 29.4 \text{ hm}$$

How much Sport Court®? (area)

$$A = A_1 + A_2 + A_3 = \frac{1}{2}(\pi(3^2)) + 5(6) + \frac{1}{2}(6)(4)$$

$$= \frac{9}{2}\pi + 30 + 12$$

$$= \boxed{\frac{9}{2}\pi + 42 \text{ hm}^2} \approx 56.1 \text{ hm}^2$$

$$100\text{m} = 1 \text{ hm}$$