Solving by Collecting Application | MFM2P

Mr. Smith is pricing out swimming memberships at two pools in Guelph. Here, "C" would be the yearly cost of swimming at each pool, and "n" would be the number of times Mr. Smith swims.

Pool	Membership Plan	Equation
Victoria Road Pool	50$ up front, and $2.50 per swim.	$C = 50 + 2.5n$
West End Recreation Centre	$100 up front, and $2.00 per swim.	$C = 100 + 2n$

Many services are priced the same way. In this case, the cost will depend on how much Mr. Smith swims. We can use our solving skills to advise Mr. Smith on which plan to get.

a) The following is an equation that will find out when each plan will cost the same. Solve this equation.

$$50 + 2.5n = 100 + 2n$$
$$-2n \qquad -2n$$
$$50 + 0.5n = 100$$
$$-50 \qquad -50$$
$$0.5n = 50$$
$$\frac{0.5n}{0.5} = \frac{50}{0.5}$$
$$\boxed{n = 100}$$

100 swims.

b) What is the significance of the value of "n" you solved for?

For 100 swims, each plan costs the same.

c) Which pool should Mr. Smith buy a membership for if he swims...

i) 80 times per year

Victoria Road will still be cheaper.

100 swims same cost.

ii) 120 times per year

West End is now cheaper.

The following graph is a visual that illustrates what we just solved for!