17.3 Number 6 (a) Algebra

$$t_n = \frac{1}{2} \cdot 4^{n-1}$$

To find the first term, n = 1 (because if the first term is all you're trying to find, then it is the nth term, and n=1)

$$t_1 = \frac{1}{2} \cdot 4^{0}$$

$$t_1 = \frac{1}{2} \cdot 4^{1-1}$$

$$t_1 = \frac{1}{2} \cdot 1$$

$$t_1 = \frac{1}{2}$$ So the first term is ½ though I think your book uses "0.5"

Then to find the second term we set n = 2

$$t_2 = \frac{1}{2} \cdot 4^{2-1}$$

$$t_2 = \frac{1}{2} \cdot 4^{1}$$

$$t_2 = \frac{1}{2} \cdot 4$$

$$t_2 = 2$$ So the second term is 2.

Then to find the third term we set n = 3

$$t_3 = \frac{1}{2} \cdot 4^{3-1}$$

$$t_3 = \frac{1}{2} \cdot 4^2$$

$$t_3 = \frac{1}{2} \cdot 16$$

$$t_3 = 8$$

So the third term is 8.

Your book writes the answer as 0.5, 2, 8 simply because they are listing them in order.