

$$b. S(x) = \frac{1}{2}$$

$$\frac{1}{2} [(3-\pi)x^2 + 4x + 1] = \frac{1}{2}$$

$$(3-\pi)x^2 + 4x + 1 = 1$$

$$(3-\pi)x^2 + 4x = 0$$

$$x [(3-\pi)x + 4] = 0$$

$$x = 0$$

rejected
since x
should be
greater than
zero

$$(3-\pi)x = -4$$

$$x = \frac{-4}{-(\pi-3)}$$

$$x = \frac{4}{\pi-3}$$

accepted

$$\text{So, for } S(x) = \frac{1}{2}, x = \frac{4}{\pi-3}$$

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