

Area and Volume Notes

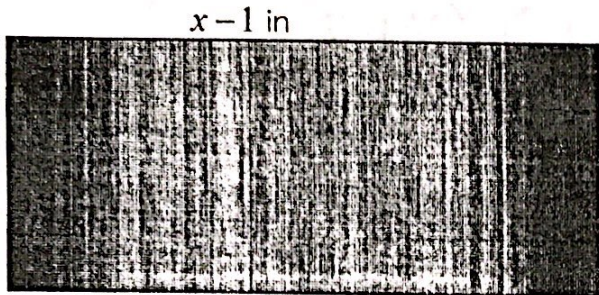
Area: Amount of space INSIDE the figure. To find area you multiply.

Rectangle or Square: $A = l \cdot w$

Triangle: $A = \frac{bh}{2}$ or $A = \frac{1}{2}bh$

Circle: $A = \pi r^2$

1. Find the area.



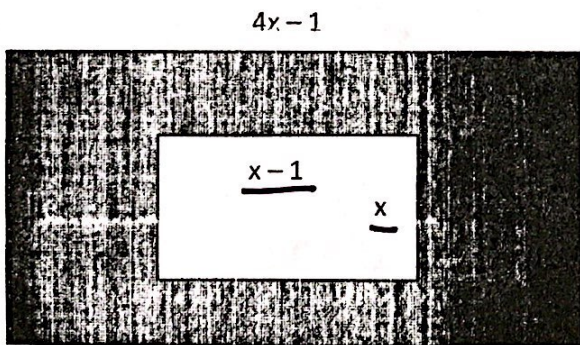
$$A = (x-1)(4x+3)$$

$$A = 4x^2 - x - 3$$

Area of a shaded region: To find the area of the shaded region you find the area of the Small Shape and the area of the large shape.

then large shape - small shape.

2. What is the area of the shaded region?



Small:

$$A = x(x-1)$$

$$= x^2 - 1x$$

Large:

$$A = (4x-1)(x+3)$$

$$4x^2 + 11x - 3$$

Large - Small

$$(4x^2 + 11x - 3) - (x^2 - 1x)$$

$$4x^2 + 11x - 3 + -x^2 + 1x$$

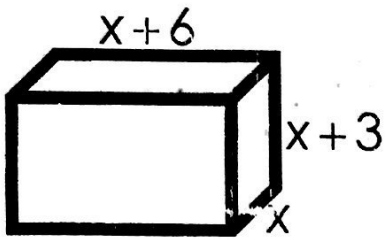
Area of Shaded Region: $3x^2 + 12x - 3$

Volume: The amount of space inside a 3D figure. Multiply

Volume of a rectangular prism or cube:

$$V = l \cdot w \cdot h$$

Find the volume of the Rectangular Prism.



$$\textcircled{1} (x+6)(x+3)$$

$$x^2 + 9x + 18$$

$$\textcircled{2} x(x^2 + 9x + 18)$$

$$V = x^3 + 9x^2 + 18x$$