

S' 1.1 # 26,

$$V(r) = \frac{4}{3}\pi r^3$$

want $V(r+1) - V(r)$

$$\begin{array}{cccc} & & & & 1 \\ & & & & 1 & 1 \\ & & & & 1 & 2 & 1 \\ & & & & 1 & 3 & 3 & 1 \end{array}$$

$$(r+1)^3 = r^3 + 3r^2 + 3r + 1$$

§ 1.2 Videos up

Domain
stuff is bad.

stuff
junk : Need junk $\neq 0$

$\sqrt[2n]{\text{negative}}$ is bad

$\sqrt{\text{junk}}$: Need junk ≥ 0

$f(x) = \sqrt{x^2 - 3x + 2}$

Need $x^2 - 3x + 2 \geq 0$

$(x-2)(x-1) \geq 0$

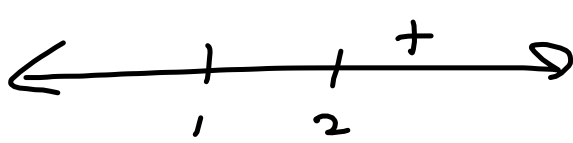
Y
= 0
x² controls ends

.....

$g(x) = \frac{750x^3}{\sqrt{x^2 - 3x + 2}}$

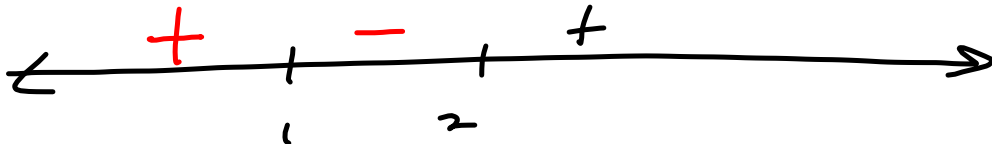
$D(g) = (-\infty, 1) \cup (2, \infty)$
(Threw out where $x^2 - 3x + 2 = 0$)

$= (-\infty, 1] \cup [2, \infty)$



analyze
two sign changes

(-)(-) (+)(-) (+)(+)



$(x-2)(x-1)$

$$f(x) = \begin{cases} x+2 & \text{if } x < 0 \\ 1-x & \text{if } x \geq 0 \end{cases}$$

