November 22

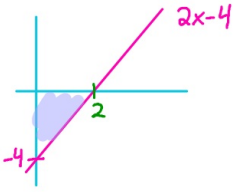
What is your favorite part of Thanksgiving?

November 22

Students will verbally explain how to find the exact area under a curve using definite integrals

(using the words:
right, left, above, below, antiderivative…)

$\int_0^2 2x-4\,dx$



$2x-4=0$
$2x=4$
$x=2$

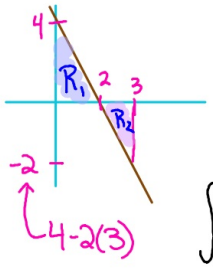
Area between x-axis & curve from 0 to 2

$A_T = \frac{bh}{2}$

$A = \frac{2(-4)}{2} = -4$

$\int_0^2 2x-4\,dx = -4$

$\int_0^3 4-2x\,dx$



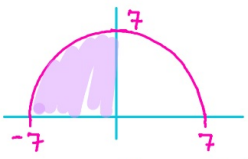
$A_{R_1} = \frac{b(h)}{2} = \frac{2(4)}{2} = 4$

$A_{R_2} = \frac{b(h)}{2} = \frac{1(-2)}{2} = -1$

$\int_0^3 4-2x\,dx = A_{R_1} + A_{R_2}$

$\int_0^3 4-2x\,dx = 4 + -1 = 3$

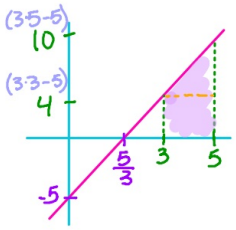
$\int_{-7}^0 \sqrt{49-x^2}\,dx$



$A = \frac{\pi r^2}{4} = \frac{\pi(7)^2}{4} = \frac{49\pi}{4}$

$\int_{-7}^0 \sqrt{49-x^2}\,dx = \frac{49\pi}{4}$

$\int_3^5 3x-5\,dx$



$3x-5=0$
$3x=5$
$x=\frac{5}{3}$

$A_R = 2(4) = 8$

$A_T = \frac{2(6)}{2} = 6$ > 14

$A_{Big\Delta} = \frac{10(\frac{10}{3})}{2} = \frac{50}{3}$

$A_{small\Delta} = \frac{4(\frac{4}{3})}{2} = \frac{8}{3}$ $> \frac{50}{3} - \frac{8}{3} = \frac{42}{3} = 14$

$A_{TRAP} = \frac{1}{2}(b_1 + b_2)(h)$

$\frac{1}{2}(4+10)(2) = 14$