GROUP QUIZ 5 QUESTIONS

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BECAUSE YOU MUST ACTUALLY EVALUATE THE INTEGRALS YOU CREATE, YOU SHOULD WRITE THE DEFINITE INTEGRAL WHICH REQUIRES THE LEAST WORK TO COMPLETE

Find the volume of each of the following solids.
YOU MUST EVALUATE YOUR INTEGRALS WITHOUT A CALCULATOR.
YOU MUST USE ONLY THE TECHNIQUES COVERED IN THIS CLASS SO FAR TO FIND ANTI-DERIVATIVES.

[a] the area under $y = x^2 + 1$ on $[-1, 2]$ is revolved around $x = 2$

[b] the area bounded by $y = \ln x$, $y = 0$ and $x = 2$ is revolved around $x = 0$

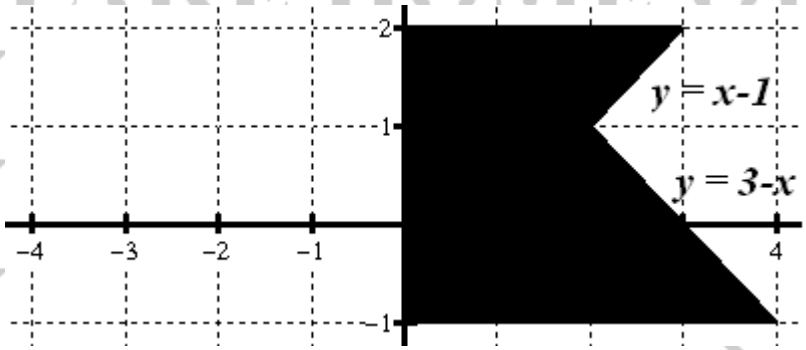
[c] the area defined by $y \le 4 - x^2$, $x \ge 0$ and $y \ge 2x + 1$ is revolved around $x = 0$

[d] the area bounded by $x^2 + y^2 = 20$ and $x = y^2$ is revolved around $x = 0$

[e] the area in the graph below is revolved around

[i] $y = -2$

[ii] $x = -2$



Find the length of the curve $y = x^{\frac{1}{2}} - \frac{1}{3}x^{\frac{3}{2}}$ **on** $[1, 4]$.

Find the surface area if the curve $y = x^3$ **on** $[0, 1]$ **is revolved around the *x*-axis.**

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