Name:_____

Find:

a) $\int_1^4 x^{9/2}\,dx$

$= \frac{2}{11} x^{11/2} \Big|_1^4$

$= \frac{2}{11}(4^{11/2}) - \frac{2}{11}$

$= \frac{2}{11}(2048) - \frac{2}{11}$

$= \frac{4094}{11}$

≈ 372.18

b) $\int_1^2 x(4-x^2)^4\,dx$

$u = 4 - x^2$

$\frac{du}{dx} = -2x$

$du = -2x\,dx$

$-\frac{1}{2}du = x\,dx$

$x = 1 \Rightarrow u = 3$

$x = 2 \Rightarrow u = 0$

$= -\frac{1}{2}\int_3^0 u^4\,du$

$= -\frac{1}{2}\frac{u^5}{5}\Big|_3^0$

$= 0 + \frac{3^5}{10}$

$= 24.3$