

Set 7 Answers (For #2b and 3b, the 'n' is a strange looking 'pi')

<p>1)</p> <p>a) $\ln 2$ b) $k = \sqrt{2}$ c) $\frac{1}{\sqrt{6}} \ln 2$</p>	<p>7)</p> <table border="1"> <tbody> <tr> <td>a</td> <td>$\left(\frac{2}{3} + \frac{2}{\pi}\right)$</td> </tr> <tr> <td>b</td> <td>$\pi \int_0^1 [1 + \sin(\pi x)]^2 dx$</td> </tr> <tr> <td>c</td> <td>$V = \pi \int_0^1 y dy + \pi \int_1^2 \left[\left(1 - \frac{1}{\pi} \arcsin(y-1)\right)^2 - \left(\frac{1}{\pi} \arcsin(y-1)\right)^2 \right] dy$</td> </tr> </tbody> </table>	a	$\left(\frac{2}{3} + \frac{2}{\pi}\right)$	b	$\pi \int_0^1 [1 + \sin(\pi x)]^2 dx$	c	$V = \pi \int_0^1 y dy + \pi \int_1^2 \left[\left(1 - \frac{1}{\pi} \arcsin(y-1)\right)^2 - \left(\frac{1}{\pi} \arcsin(y-1)\right)^2 \right] dy$				
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<p>4)</p> <table border="1"> <tbody> <tr> <td>a</td> <td>$\frac{\pi}{4} - \frac{1}{2}$</td> </tr> <tr> <td>b</td> <td>$\pi \int_0^{\frac{\pi}{4}} \left(\frac{\sec^4 x}{4} - \tan^4 x \right) dx$</td> </tr> </tbody> </table>	a	$\frac{\pi}{4} - \frac{1}{2}$	b	$\pi \int_0^{\frac{\pi}{4}} \left(\frac{\sec^4 x}{4} - \tan^4 x \right) dx$	<p>10)</p> <table border="1"> <tbody> <tr> <td>a</td> <td>(2,4) (4,16) (-0.767, 0.588) or (-0.766, 0.588)</td> </tr> <tr> <td>b</td> <td>$\int_0^{0.588} 2\sqrt{y} dy + \int_{0.588}^4 \left(\sqrt{y} - \frac{\ln y}{\ln 2} \right) dy + \int_4^{16} \left(\frac{\ln y}{\ln 2} - \sqrt{y} \right) dy$ $\int_{-0.767}^2 (2^x - x^2) dx + \int_2^4 (x^2 - 2^x) dx$</td> </tr> <tr> <td>c</td> <td>$\int_{-0.767}^2 ((5-x^2)^2 - (5-2^x)^2) dx$</td> </tr> </tbody> </table>	a	(2,4) (4,16) (-0.767, 0.588) or (-0.766, 0.588)	b	$\int_0^{0.588} 2\sqrt{y} dy + \int_{0.588}^4 \left(\sqrt{y} - \frac{\ln y}{\ln 2} \right) dy + \int_4^{16} \left(\frac{\ln y}{\ln 2} - \sqrt{y} \right) dy$ $\int_{-0.767}^2 (2^x - x^2) dx + \int_2^4 (x^2 - 2^x) dx$	c	$\int_{-0.767}^2 ((5-x^2)^2 - (5-2^x)^2) dx$
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