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Chapter 6 - 7 Test Review

1) Find the volume of the rotated region bounded by the curves

$$x = y^2, x = 1 - y^2; \text{ about } x = -1$$

2) Find the volume of the rotated region bounded by the curves

$$y = \frac{1}{1+x^2}, y = \frac{x}{2}; \text{ around the } y - \text{ axis}$$

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3) Find the volume of the rotated region bounded by the curves

$$y = 1 - x^2, y = x^6 - x + 1; \text{ around the } y - \text{ axis}$$

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$$4) \int x^4 \ln x \, dx$$

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$$5) \int_0^{\frac{\pi}{3}} e^{3x} \cos x \, dx$$

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$$6) \int \tan^4 x \sec^2 x \, dx$$

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$$7) \int \sin^5 x \cos^2 x \, dx$$

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$$8) \int \frac{1}{x^2 \sqrt{x^2 - 16}} dx$$

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$$9) \int_1^2 \frac{3x^2+6x+2}{x^2+3x+2} dx$$

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10) $\int \frac{10}{(x-1)(x^2+9)} dx$