CALCULUS I – Worksheet #35

Find the **volume** of the solid that is generated by rotating about the indicated axis the region bounded by the given curves.

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1. $y = \sin x,\ x = 0,\ x = p,\ y = 0$ (x–axis)

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2. $y = x^2,\ x = y^2$ (x–axis)

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3. $y = 1 - x^2,\ y = 0$ (x–axis)

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4. $y = 1 - x^2,\ y = 0$ (y–axis)

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5. $y = 6 - x^2,\ y = 2$ (x–axis)

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6. $x = 4,\ y = 0,\ y = x^2$ (y–axis)

Graph the region bounded by the given curves and then find its **area**.

7. $y = x^2,\ y = x^3$

Problems 8 – 10: $\int_2^3 f(x)\,dx = 6$ $\int_3^5 f(x)\,dx = 4$ $\int_2^3 g(x)\,dx = 1$ $\int_2^5 g(x)\,dx = 8$ $\int_2^5 h(x)\,dx = 13$ $\int_3^5 h(x)\,dx = 10$

8. $\int_2^5 f(x)\,dx$ 9. $\int_3^3 h(x)\,dx$ 10. $\int_2^3 2g(x)\,dx$

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11. $\int x \cos 2x\,dx$ 12. $\int 6^x\,dx$ 13. $\sum_{b=1}^{4} (3b - 2)$
