EMCF 36

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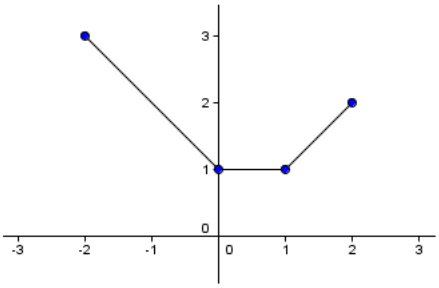
1. Give the volume generated when the region between the *x*-axis and the graph of $g(x) = x^2$ on the interval [0,2], is rotated around the *x*-axis.
    a. 32 π /5
    b. 32 π /4
    c. 16 π /3
    d. 32 π /3
    e. 27 π /5
    f. None of these.
2. Give the volume generated when the region between the *x*-axis and the graph of $g(x) = x^2 + 1$ on the interval [0,2], is rotated around the *x*-axis. Select the closest value below.
    a. 42.78413
    b. 43.14454
    c. 44.21654
    d. 45.14564
    e. 40.84070
    f. None of these.
3. Give the volume generated when the region between the *x*-axis and the graph of $g(x) = 1 - x^2$ is rotated around the *x*-axis. Select the closest value below.
    a. 3.37464
    b. 3.87165
    c. 3.21442
    d. 3.35103
    e. 3.78144
    f. None of these.
4. Give the volume generated when the region between the graphs of $g(x) = x^2$ and $y = x$ is rotated around the *x*-axis. Select the closest value below.
    a. .41888
    b. .42166
    c. .43377
    d. .44165
    e. .45122
    f. None of these.

5. Give the volume generated when the region between the *x*-axis and the graph of $g(x)=1-x^2$ is rotated around the line $y=-1$. Select the closest value below.
    a. 11.42355
    b. 11.53672
    c. 11.64321
    d. 11.72861
    e. 11.87644
    f. None of these.
6. Give the volume generated when the region between the *x*-axis and the graph of $g(x)=1-x^2$ is rotated around the line $y=1$. Select the closest value below.
    a. 4.80342
    b. 4.92378
    c. 5.02655
    d. 5.13289
    e. 5.21733
    f. None of these.
7. Give the volume generated when the region between the *x* axis and the graph of the function f shown below on the interval $[-2,2]$ is rotated around the *x*-axis. (**Note:** The volume can be found without integration, but using formulas for the volumes of cones and cylinders.) Select the closest value below.



    a. 37.6991
    b. 38.4223
    c. 38.9578
    d. 39.2195
    e. 39.8456
    f. None of these.

8. Give the average value of the function f graphed in problem 7 on the interval [-2,2]?
    a. $13/4$
    b. $13/8$
    c. $11/4$
    d. $11/8$
    e. $11/3$
    f. None of these.
9. Let f be the function graphed in problem 7. Give the area bounded between the graph of f and the x-axis on the interval [-1,2].
    a. 3
    b. $7/2$
    c. 4
    d. $9/2$
    e. 5
    f. None of these.
10. Let f be the function graphed in problem 7. Give the area bounded between the graph of f and the graph of $g(x) = -|x|$ on the interval [-2,2].
    a. $23/2$
    b. $21/2$
    c. $19/2$
    d. $17/2$
    e. None of these.