1 Area

Find the area enclosed by the curves.

1. $y = x(x^2 - 1)$ and the x-axis from $x = 1$ to $x = 3$.

2. $y = -x^2 + 3x$, the x-axis, $x = 0$, and $x = 2$.

3. $y = x(x - 1)^2$ and $y = 0$.

4. $y = 2 + x - x^2$ and $y = 0$.

5. $y = (4 + x)(2 - x)$ and the x-axis.

6. $y = 4x - x^3$, the x-axis, $x = 0$, and $x = 2$.

7. $y = \sqrt{x}$, the x-axis, and $x = 4$.

8. $y = x^3$, the x-axis, and $x = 2$.

9. $= e^x - x$, $y = 0$, $x = 1$, and $x = 5$.

10. $y = 1 + \cos x$, $x = -\pi$, $x = \pi$, and $y = 0$.

11. $y = 2x - x^2$ and $y = 0$.

Answers:

1. 16

2. $\dfrac{10}{3}$

3. $\dfrac{1}{12}$

4. $\dfrac{9}{2}$

5. 36

6. 4

7. $\dfrac{16}{3}$

8. 4

9. $e^5 - e - 12$

10. 2π

11. $\dfrac{4}{3}$