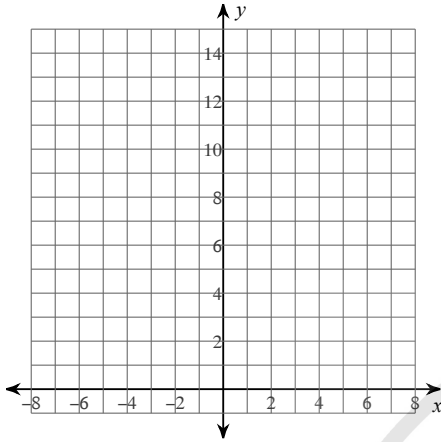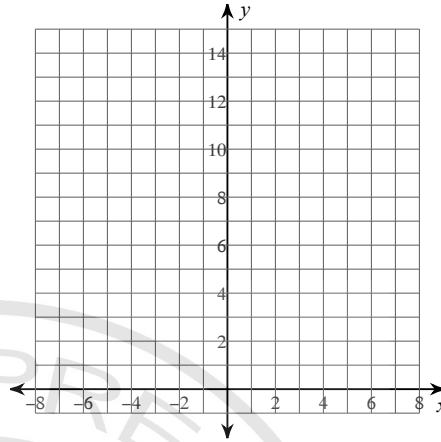Assignment:Approximating Area under the curve

For each problem, approximate the area under the curve over the given interval using 4 left endpoint rectangles. You may use the provided graph to sketch the curve and rectangles.

1) $y = -x^2 + 2x + 9;\ [-1, 3]$

2) $y = -x + 3;\ [-4, 0]$

3) $y = x^2 + 2x + 4;\ [-4, 0]$

4) $y = -\dfrac{x}{2} + 3;\ [-4, 4]$

For each problem, approximate the area under the curve over the given interval using 4 right endpoint rectangles. You may use the provided graph to sketch the curve and rectangles.
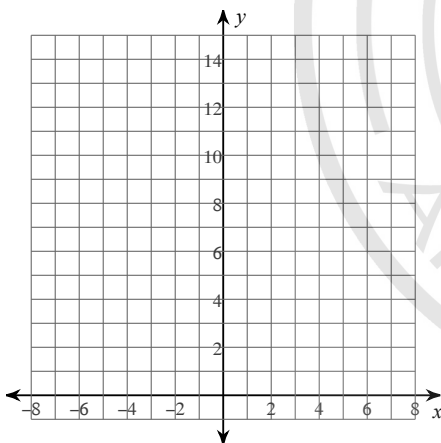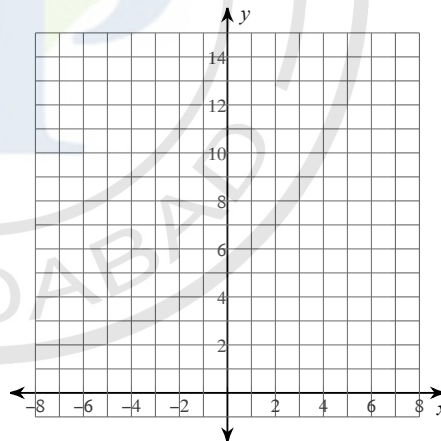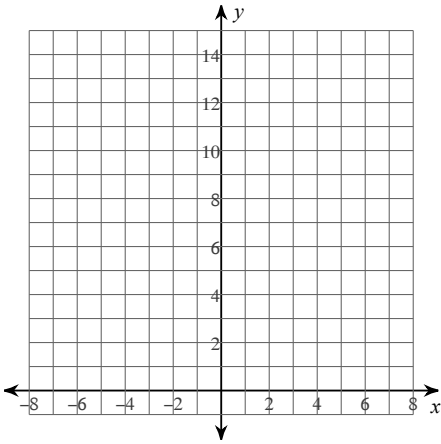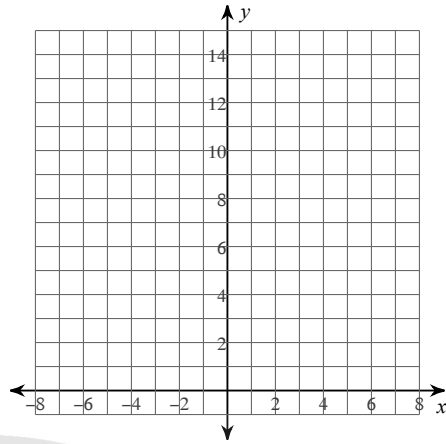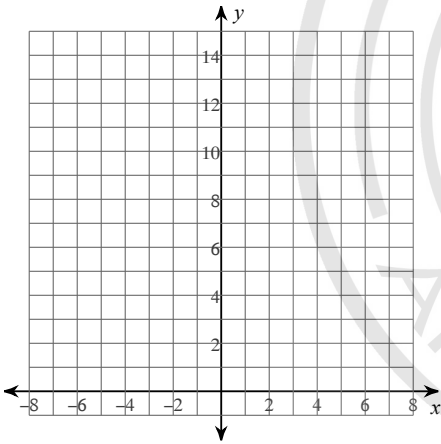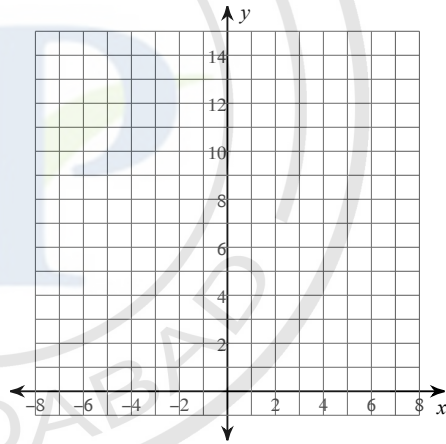
5) $y = x + 6$; $[-4, 4]$

6) $y = -x^2 + 2x + 11$; $[-1, 3]$

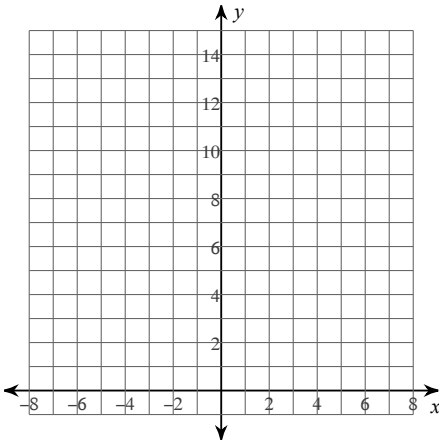7) $y = \dfrac{x^2}{2} + x + 1$; $[-6, -2]$
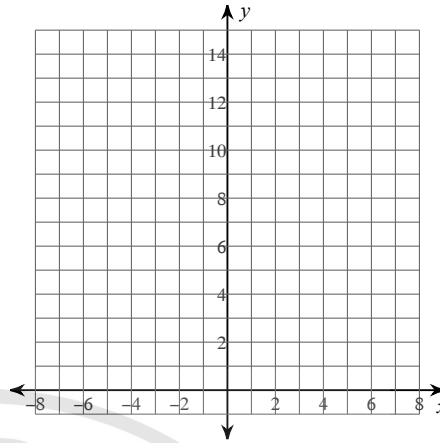
8) $y = \dfrac{x}{2} + 3$; $[-3, 5]$

For each problem, approximate the area under the curve over the given interval using 4 midpoint rectangles. You may use the provided graph to sketch the curve and rectangles.
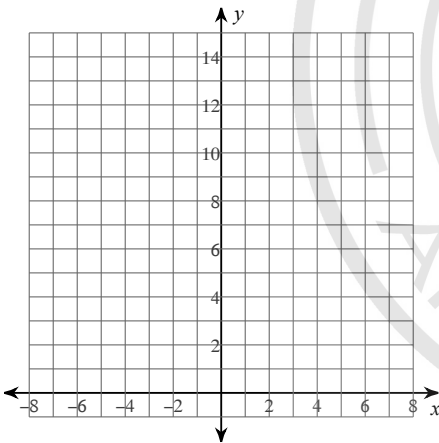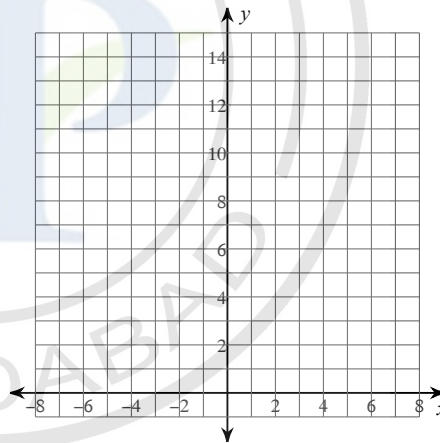
9) $y = -x^2 - 2x + 11$; $[-2, 2]$

10) $y = \dfrac{x}{2} + 6$; $[-1, 7]$

11) $y = -\dfrac{x}{2} + 5$; $[3, 7]$

12) $y = -\dfrac{x}{2} + 6$; $[2, 6]$

Answers to Assignment:Approximating Area under the curve

1) 34   2) 22   3) 26   4) 28

5) 56   6) 42   7) 17   8) 32

9) 39   10) 60   11) 10   12) 16