Functions - Practice Problems

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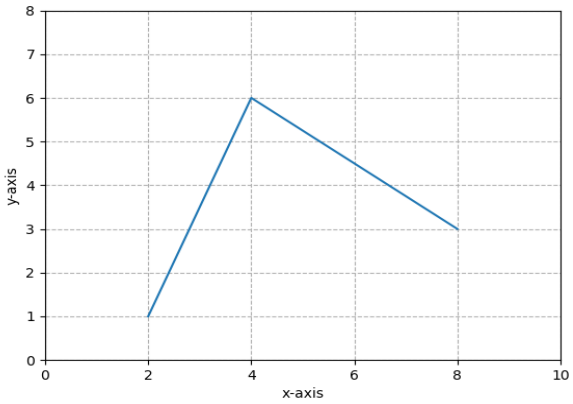
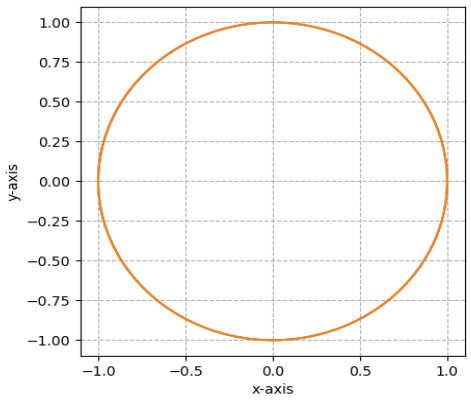
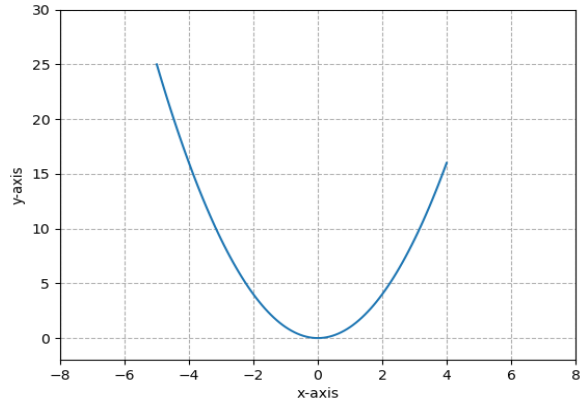
1. Given the following plots, determine whether each of graph shows a function or not:



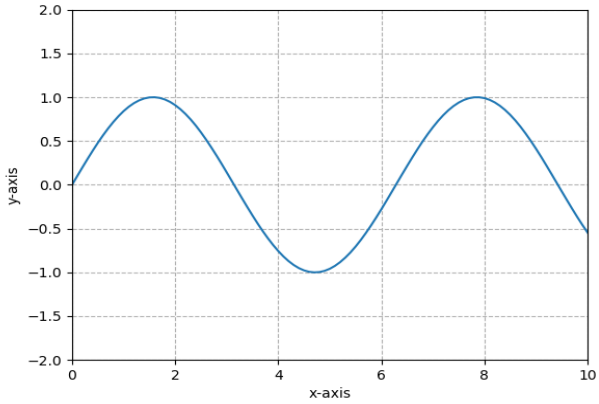
(a)



(b)



(c)



(d)

2. Determine the domain and range of the following functions:

   (a) $y = 4 - x^2$

   (b) $y = \sqrt{x-1}$

   (c) $y = \frac{1}{x-2}$

   (d) $y = 1 + \frac{1}{x}$

   (e) $y = -x^4 + 4$

   (f) $y = \frac{1}{\sqrt{4-x^2}}$

   (g) $y = \sqrt[3]{x+1}$

3. Determine whether the following functions are even, odd, or neither:

   (a) $y = 2x^x + 2x^3 + 1$

   (b) $y = x^4 + 3x^3 - 2x^2 + 8$

   (c) $y = \frac{1}{x^2-1}$

   (d) $y = \sqrt{5x^2 - 1}$

   (e) $y = -x^4 + 4$

   (f) $y = \frac{x^2+1}{x^2-1}$

   (g) $y = \sqrt[3]{x^4 + 1}$

   (h) $y = 3x^5 - x^4 + 3x^2 - 2x + 1$