

Mth133 – Calculus: Algebra and Trigonometry Review Homework - Solutions

1a. $f(x+y) = x^2 + 2xy + y^2 + x + y$

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

2. $\frac{xy^2 - 2x^2}{2x^2y^2 + y^2}$

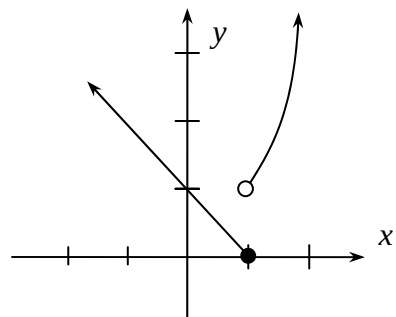
3. $\sqrt{x} + 2$

4. x-intercepts: $x = 1, -5$

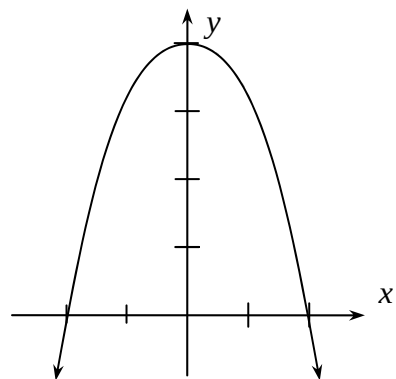
y-intercepts: $y = -5$

5a. $f(-2) = 3, f(1) = 0, f(3) = 9$

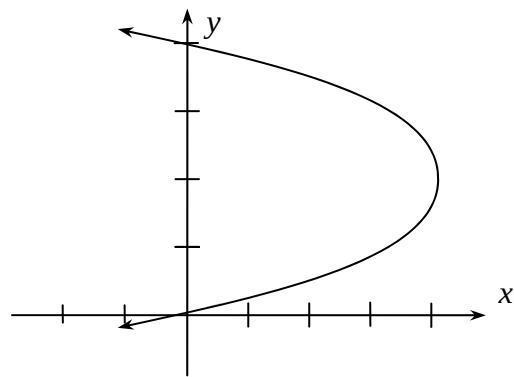
5b.



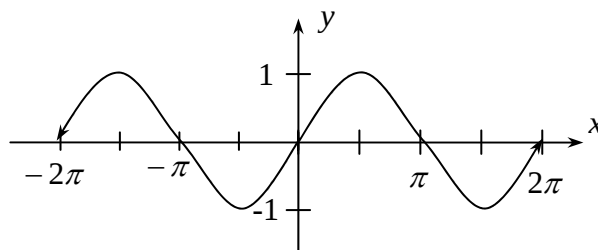
6a.



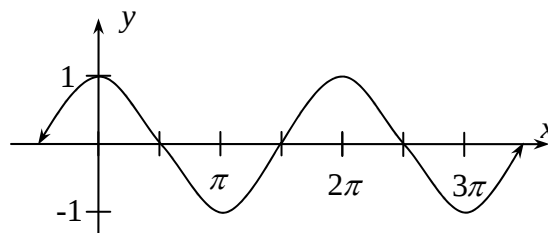
6b.



6c.



6d.



7a. $x = 0, -1 \pm \sqrt{5}$

7b. $x = \frac{1}{2}, \pm 2$

8a. $\{x \mid 3 < x < 4\}$

8b. $\{x \mid -3 < x < 0 \text{ or } x > 2\}$

9a. $x = -3$

9b. $x = -2, 0$

10a. $\{x \mid x < -3 \text{ or } 1 < x < 3\}$

10b. $\{x \mid -3 < x < 1 \text{ or } x > 1\}$

11a. $\frac{\sqrt{3}}{2}$

11b. 0

11c. $\frac{1}{2}$

11d. $\frac{\sqrt{3}}{3}$

11e. -1

11f. -2