

## 2.4 Answers

2.a) 1

b)  $\frac{7 - \sqrt{41}}{2}$

6.a)  $-\frac{2}{\pi} \approx -0.637$

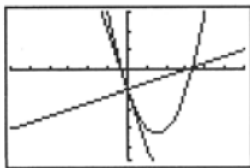
b) 0

12. a)  $m = -3$

b)  $y = -3x - 1$

c)  $y = x/3 - 1$

d)



$[-6, 6]$  by  $[-5, 3]$

16. Yes. The slope = -1.

18. No. The function is discontinuous at  $x = 3\pi/4$ .

22. a)  $-2a$

b) The slope of the tangent steadily decreases as  $a$  increases.

26.  $16\pi \text{ in}^3/\text{in}$

28. 45.76 m/sec

32. at  $x = -1$ :  $y = 2x + 10$

at  $x = 3$ :  $y = -6x + 18$

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35. True. The normal line is perpendicular to the tangent line at the point.

36. False. There is no tangent at  $x = 0$  because  $f$  has no slope at  $x = 0$ .

37. D

39. C

38. E

40. A