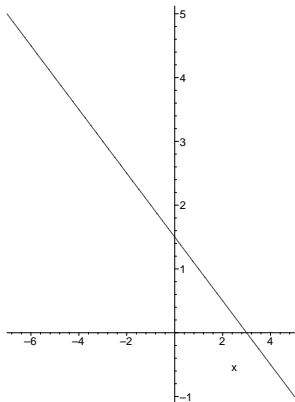
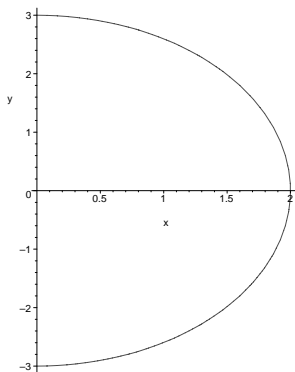


Answers to WIR 2 Review Problems

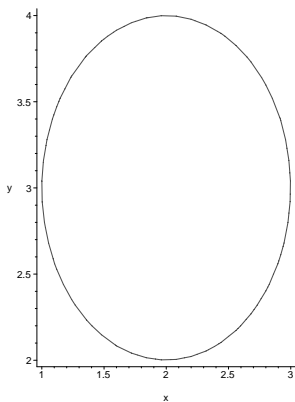
1. a.) $y = \frac{3}{2} - \frac{1}{2}x$



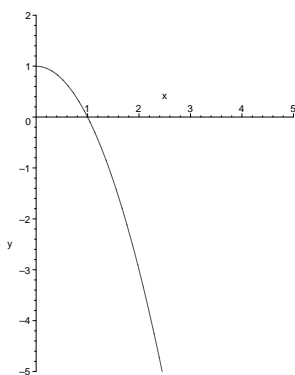
b.) $\frac{x^2}{4} + \frac{y^2}{9} = 1, 0 \leq x \leq 2, -3 \leq y \leq 3$



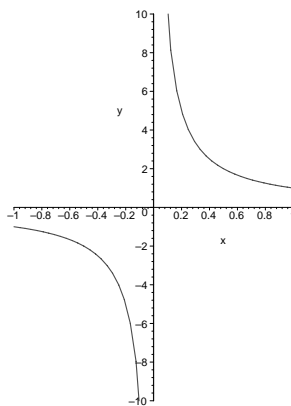
c.) $(x-2)^2 + (y-3)^2 = 1$, motion is clockwise around the circle.



d.) $y = 1 - x^2, x \geq 0$



e.) $y = \frac{1}{x}, -1 \leq x < 0, 0 < x \leq 1$



2. a.) The object is located at the point (3, 6)

b.) $t = 3$

c.) no

d.) $y = (x - 1)^2 + 2$

3. $x = 1 \pm 6t, y = 3 \pm 4t$ or $x = -5 \pm 6t, y = 7 \pm 4t$

4. The lines intersect at the point $(\frac{2}{5}, \frac{36}{5})$

5. $x = 1 + 2t, y = 2 - 4t$

6. a) 4

b) 3

c) Does not exist

d) 2

e.) ∞

f.) 7

7. $\lim_{x \rightarrow 3^-} f(x) = \infty$

8. There is a hole in the graph of $f(x)$ at the point $(1, \frac{1}{2})$. There is a vertical asymptote at $x = -1$; $\lim_{x \rightarrow -1^+} f(x) = \infty, \lim_{x \rightarrow -1^-} f(x) = -\infty$

9. 2

10. -5

11. $\frac{1}{16}$

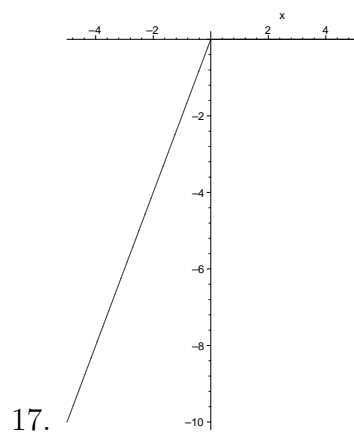
12. $\frac{-1}{9}$

13. Limit does not exist since $\lim_{x \rightarrow 1^+} f(x) = -\infty$ and $\lim_{x \rightarrow 1^-} f(x) = \infty$

14. Limit does not exist since $\lim_{x \rightarrow 3^+} f(x) = 24$ and $\lim_{x \rightarrow 3^-} f(x) = 8$

15. Limit does not exist since $\lim_{x \rightarrow 2^+} f(x) = 4$ and $\lim_{x \rightarrow 2^-} f(x) = -4$

16. $-\infty$



Note: It is hard to see on this picture, but the graph goes along the x axis as well. The equations are $y = 0$ if $x \geq 0$ and $y = 2x$ if $x < 0$.

There are no points where the limit does not exist.

18. 4