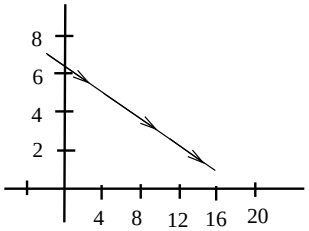
Spring 2012 Math 151

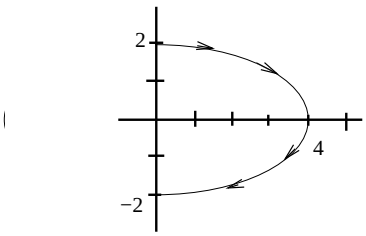
Week in Review # 2
sections: 1.2, 1.3, 2.2
courtesy: Joe Kahlig

Section 1.3

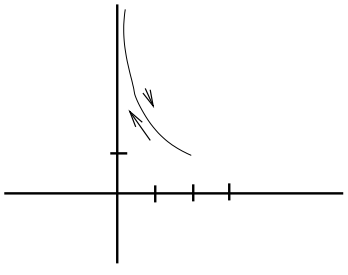
1. (a) 7
   (b) 30
2. $\theta = 119.7^o$
3. $x = 2.5$, $x = -5$
4. scalar projection $= \dfrac{-11}{\sqrt{37}}$
   vector projection $= \left\langle \dfrac{-66}{37}, \dfrac{-11}{37} \right\rangle$
5. $x = 57$
6. $\dfrac{9}{sqrt5}$
7. 105Nm = 105J
8. 1174.6J
9. (a) $y = \dfrac{-1}{3}x + \dfrac{19}{3}$



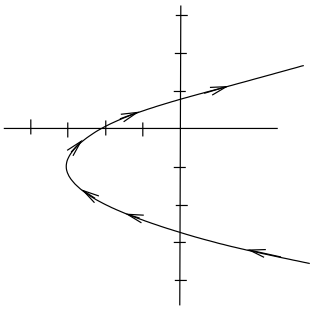
   (b) $\dfrac{x^2}{16} + \dfrac{y^2}{4} = 1$



   (c) $y = \dfrac{2}{x}$



10. (a) no
    (b) yes, $t = 6$
    (c) $x = (y+1)^2 - 3$



11. answers may vary.
    (a) vector: $\mathbf{r}(t) = \langle -3 + 3t, 5 - 2t \rangle$
    parametric: $x = -3 + 3t$, $y = 5 - 2t$
    (b) vector: $\mathbf{r}(t) = \langle -1 + 3t, 5 + 2t \rangle$
    parametric: $x = -1 + 3t$, $y = 5 + 2t$
12. not parallel and not perpendicular.
    intersect at $(-4, -7)$
13. -2
14. 1
15. DNE
16. 3
17. 2
18. DNE
19. ∞
20. 1
21. $x = -3$, $x = 1$, and $x = 5$
22. hole at $x = -4$
    vertival asymptotes: $x = 0$, $x = 2$