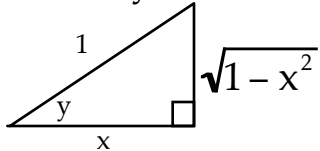


Problem Set 65

2. $h(t) = -4.9t^2 + 500$
 $h(3) = 455.9 \text{ m}$
 $v(3) = -29.4 \text{ m/s}$
 $a(3) = -9.8 \text{ m/s}^2$

4. $x = \cos y$



$$\frac{d}{dx} f^{-1}(x) = -\frac{1}{\sqrt{1-x^2}}$$

$$(f^{-1})'(0.2) \approx -1.021$$

6. $\frac{2}{x^2 + 4}$

8. maximum of 2 at $x = -1$ and $x = 3$
 minimum of 0 at $x = 1$

10a. $3x - \frac{1}{12}x^3$
 b. $4\sqrt{3} \text{ units}^2$

12. $a = \frac{4}{3}; \quad b = \frac{11}{3}$

14. $\frac{1}{2}e^{x^2+\pi} + C$

16a. $\left(\frac{4}{3}k^2 + 4\right) \text{ units}^2$

b. $\frac{3}{2}$

18. 12

20. 2

22. concave up: $(-2, -1), (2, \infty)$
 concave down: $(-\infty, -2), (-1, 2)$

24. B