1. (a) $f(t) = 4.15(1.042045)^t$
   (b) 216 zlobeks
   (c)
   $$t = \frac{\ln(\frac{z}{4.15})}{\ln(1.042045)}$$
   (d) In 1965 a stamp costs 60 zlobek.
2. (a) 150
   (b) 19.997
   (c) 375
3. (a) $P(t) = 41 + 4\sin(\frac{\pi}{24}(t+14))$
   (b) 39
   (c) during the interval from 11.9 to 32.1 days.
4. (a) 40.84 inches/sec
   (b) it takes 6 seconds and coordinates are $(-1.56, -4.75)$
5. (a) $x(t) = (220\sqrt{2})t$, $y(t) = 5480 + (220\sqrt{2})t - 16t^2$
   (b) $(3025, 6992.5)$
   (c) it crashes at 25.7130 seconds at $(8000, 2901.5)$
6. (a) 1.398 seconds
7. (a) $l = \frac{200}{\cos\theta} + \sqrt{(100)^2 + (600 - 200\tan\theta)^2}$
   (b) 1.107 radians (63.43 degrees)
8. (a) $N = 500 + 160(12 - x)$
   (b) $P = -160x^2 + 2900x - 10060$
   (c) price should be \$9.06 and profit is \$3080
9. (a)
   $$\begin{array}{ll} y = .75x + 11.5, & -6 \leq x \leq -2 \\ y = 10 + \sqrt{4 - x^2}, & -2 \leq x \leq 2 \\ y = -.75x + 11.5, & 2 \leq x \leq 6 \end{array}$$
   (b) Yes, because $y \geq 11$ when $-1.5 \leq x \leq 1.5$.