

**Week in Review # 1**

- horizontal line:  $y = 9$   
vertical line:  $x = 4$
- slope of line thru A and B is  $m = \frac{22-7}{9-3} = 2.5$   
Answer:  $y - 14 = 2.5(x - 8)$
- solve for y:  $y = \frac{-7}{4}x + \frac{21}{4}$  so the slope of a line perpendicular is  $m = \frac{-1}{\frac{-7}{4}} = \frac{4}{7}$   
Answer:  $y - 10 = \frac{4}{7}(x - 7)$
- points (7, 0) and (0, -8).  $m = \frac{0-(-8)}{7-0} = \frac{8}{7}$   
Answer:  $y + 8 = \frac{8}{7}(x - 0)$
- slope of the line thru B and C is  $m_1 = \frac{5-1}{2-a} = \frac{4}{2-a}$   
slope of the line thru D and E is  $m_2 = \frac{a+2-2}{4-1} = \frac{a}{3}$   
now set  $m_1 = \frac{-1}{m_2}$  and solve for a  
 $a = -6$
- points are (0, 350000) and (8, 145000)
  - $m = \frac{350000-145000}{0-8} = -25,625$   
answer: rate of depreciation is \$25,625 per year.
  - $y - 350000 = -25625(x - 0)$  or  
 $y = -25625x + 350000$
  - \$273,125
  - $54000 = -25625x + 350000$   
Answer:  $x = 11.5512$  years
- $C = 10x + 50000$   
 $R = 26x$   
 $P = 26x - (10x + 50000) = 16x - 50000$
- $C = Ax + 264$ , where A is cost per item.  
 $344 = A(20) + 264$   
 $A = \$4$   
 $R = sx$ , where s is selling price per item.  
 $P = R - C = sx - (4x + 264)$   
 $136 = s(50) - (4 * 50 + 264)$   
 $s = \$12$   
Answers:  $C = 4x + 264$   
 $R = 12x$
- $80x = 30x + 425$   
 $x = 8.5$   
Answer: 8,500 shells
- points (3000, 10) and (8000, 5)
  - $m = \frac{10-5}{3000-8000} = -0.001$   
answer:  $p = -0.001x + 13$
  - solve where supply and demand are equal.  
 $-0.001x + 13 = 0.004x + 5$   
 $x = 1600$   
 $p = -0.001(16000) + 13 = 11.40$   
Answer: (1600, 11.40)
- points (5000, 250) and (8000, 200)  
 $m = \frac{250-200}{5000-8000} = \frac{-1}{60}$   
 $p - 250 = \frac{-1}{60}(x - 5000)$   
 $p = \frac{-1}{60}x + \frac{1000}{3}$   
 $60p = -x + 20000$
  - points (0, 100) and (3000, 175)  
 $m = \frac{175-100}{3000-0} = \frac{1}{40}$   
 $p - 100 = \frac{1}{40}(x - 0)$   
 $p = \frac{1}{40}x + 100$   
 $40p = x + 4000$
  - solve for the intersection of  
 $60p = -x + 20000$  and  $40p = x + 4000$   
add the equations together and you get:  $100p = 240000$   
Answer:  $p = \$240$ .
  - $40 * 240 = x + 4000$   
Answer:  $x = 5600$  rackets
- Do a time shift on the data. Let 1975 correspond to zero.  
Answer:  $y = -0.3046x + 230.0354$
- $y = 8.5421x - 401.2325$
  - $y = 8.5421(67) - 401.2325$   
 $y = 171.0882$  lbs
  - $235 = 8.5421x - 401.2325$   
 $x = 74.4820$  inches