RH Midterm Extra Practice

1) $\frac{1}{4}x\left[(4x^2+7x)+(x^3+9x-8)\right]$

$\frac{1}{4}x(x^3+4x^2+16x-8)$

$\frac{1}{4}x^4+x^3+4x^2-2x$

2) $K=\frac{mv^2}{2}$

$2K=mv^2$

$\frac{2K}{m}=v^2$

$v=\sqrt{\frac{2K}{m}}$

3) $\cancel{16}^{1}\left(\frac{x+3}{\cancel{16}_{1}}\right)+\cancel{16}^{4}\left(\frac{1}{\cancel{4}_{1}}\right)=\cancel{16}^{2}\left(\frac{x+6}{\cancel{8}_{1}}\right)$

$x+3+4=2(x+6)$

$x+7=2x+12$

$7=x+12$

$-5=x$

4) x = # of composition books

$2.50x+4<26$

$2.50x<22$

$x<8.8$

At most 8 composition books can be purchased.

5) $3x$ = # of oz of red candy | 12oz | (3·4)

$4x$ = # of oz of green candy | 16oz | (4·4)

$.50(3x)+.25(4x)=10$

$1.5x+x=10$

$2.5x=10$

$x=4$

6) a) $y = 3.4x + 12$

b) $y = 3.4(10) + 12$
$y = 46$ flu cases

c) $r = .98$
strong positive correlation

7) a) $(1, 35)$
$(3, 57)$

slope

$\frac{\Delta y}{\Delta x} = \frac{57-35}{3-1}$

$= \frac{22}{2}$

$= 11$

y-int.

$y = mx + b$
$35 = 11(1) + b$
$35 = 11 + b$
$24 = b$

equation

$y = 11x + 24$

b) $y = 11(5) + 24$
$y = 79$ participants

8) y-intercept : -1
slope : $\frac{\text{rise}}{\text{run}}$ $\frac{3}{1}$

$y < 3x - 1$