Mat 011 Agenda - Day 24: June 29, 2004

- Review for Final

Homework: Topic 35: p. 34

Mat 011 Agenda - Day 25: June 30, 2004

- Final Exam

Final grades will be posted in Blackboard and Web Advisor by Friday.
\[ \left( \frac{78 + 78 + x}{2} \right) = \left( \frac{70}{1} \right) \]

\[ 156 + x = 210 \]

\[ x = 54 \]
\[
\frac{78 + x}{2} = 90
\]

\[
78 + x = 180
\]

\[
78
\]

\[
-78
\]

\[
X = 102
\]
\[
\frac{78 + 82}{2} = 80
\]
2. \[ \frac{x}{4} + \frac{8.1}{2} = \frac{8.7}{8} \]

\[ 2x + 4 = 7 \]

\[ -4 - 4 \]

\[ \frac{2x}{2} = \frac{3}{2} \]

\[ x = \frac{3}{2} = 1.5 \]
\[
\frac{7x}{2x^3} \cdot \frac{2x^2}{5} = \frac{35}{4x^4}
\]

\[
\frac{7x}{2x^3} \cdot \frac{5}{2x^2} = \frac{35}{4x^4}
\]
\[
\frac{2}{6(4x+2)} = \frac{6(x-1)}{6}
\]

\[
18 - 2(4x+2) = x - 1
\]

\[
18 - 8x - 4 = x - 1
\]

\[
14 - 8x = x - 1
\]

\[
+8x \quad 8x
\]

\[
14 = 9x - 1
\]

\[
+1 +1
\]

\[
15 = 9x
\]

\[
\frac{15}{9} = \frac{5}{3} = x
\]
\[ C = 400 + 18.1S \]

\[ 1000 < C < 5000 \]

\[
\begin{align*}
1000 & < 400 + 18.1S < 5000 \\
-400 & \quad -400 \\
600 & \quad \frac{18.1S}{18.1} < \frac{4600}{18.1} \\
\end{align*}
\]

\[ 33.15 < S < 254.14 \]

\[ 33.15 \quad (83.15, 254.14) \]
<table>
<thead>
<tr>
<th>ID</th>
<th>Calculations</th>
<th>Time</th>
<th>Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$200 \times 1.04$</td>
<td></td>
<td>$208$</td>
</tr>
<tr>
<td>2</td>
<td>$200 \times (1.04)^2$</td>
<td></td>
<td>$216.32$</td>
</tr>
<tr>
<td>3</td>
<td>$200 \times (1.04)^3$</td>
<td></td>
<td>$224.9$</td>
</tr>
<tr>
<td>N</td>
<td>$200 \times (1.04)^n$</td>
<td></td>
<td>$533.16$</td>
</tr>
<tr>
<td>25</td>
<td>$200 \times (1.04)^{25}$</td>
<td></td>
<td>$533$</td>
</tr>
</tbody>
</table>
\[ P = A \left[ \frac{i}{1-(1+i)^{-n}} \right] \]

\[ A = 10,000 \]
\[ n = 36 \]
\[ i = \frac{.06}{12} \]
\[ L = .005 \]

\[ P = 10,000 \left[ \frac{.005}{1-(1.005)^{-36}} \right] \]

\[ = 10,000 \left[ \frac{.005}{1-.8356} \right] \]

\[ = 10,000 \left[ \frac{.005}{.1644} \right] \]

\[ = 10,000 \left( 0.3041 \right) \]

\[ = \$30410 \]
\[ G = 0.50(T) + 0.20(H) + 0.30(E) \]
\[ = 0.50(78) + 0.20(81) + 0.30(90) \]
\[ G = 39 + 16.2 + 27 \]
\[ G = 82.2 \]

\[ 70 = 0.50(73) + 0.20(68) + 0.30 \chi \]
\[ 70 = 36.5 + 13.6 + 0.30 \chi \]
\[ 70 = 50.1 + 0.30 \chi \]
\[ -50.1 \]
\[ 19.9 = 0.30 \chi \]
\[ \frac{19.9}{0.3} = \chi \]
\[ 66.3 = \chi \]
<table>
<thead>
<tr>
<th>Original Price</th>
<th>You Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>.75(10)</td>
</tr>
<tr>
<td>17</td>
<td>.75(17)</td>
</tr>
<tr>
<td>C</td>
<td>.75CP</td>
</tr>
<tr>
<td>OP</td>
<td>.75OP</td>
</tr>
</tbody>
</table>

\[
SP = .75OP = 11.95 - .75 = .75CP = 15.93 = OP
\]
\[ W_A = 0.07S + 15,000 \]
\[ W_B = 0.15S \]

<table>
<thead>
<tr>
<th>Sales</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>50,000</td>
<td>0.07(50,000) + 15,000 = $18,1500</td>
<td>0.15(50,000) = $7,500</td>
</tr>
<tr>
<td>200,000</td>
<td>0.07(200,000) + 15,000 = $29,000</td>
<td>0.15(200,000) = $30,000</td>
</tr>
</tbody>
</table>
\[
4x^{-3} = 4 \cdot \frac{1}{x^3} = \frac{4}{x^3}
\]

\[
(4x)^{-3} = \frac{1}{(4x)^3} = \frac{1}{4^3x^3} = \frac{1}{64x^3}
\]
\[ W_A = W_B \]
\[ 0.075 + 15,000 = 0.155 \]
\[ -0.075 \]
\[ \frac{15,000}{0.08} = 0.88 \]
\[ \$181,500 = 5 \]
then
than
\[
\frac{3}{4x} + \frac{\frac{x}{2}}{x/2} = \frac{15 + 7x}{12x}
\]
#5

- 1986 2.10
- 1988 2.26
- 1992 4.00

average rate of change = SLOPE

= \frac{\text{rise}}{\text{run}} = \frac{4.00 - 2.10}{6} = \frac{1.90}{6} = 0.316 \text{ trillion per year}
\[ \frac{\text{New} - \text{Old}}{\text{Old}} = \frac{4.00 - 2.20}{2.20} = \frac{1.8}{2.2} = 0.818 \text{ or } 81.8\% \]
Let \( m = \frac{\text{# miles}}{\text{mi}} \)

\[
\begin{align*}
C_B &= C_s \\
40 &= 0.30m + 25 \\
-25 &= -25 \\
15 &= 0.30m \\
\frac{15}{0.3} &= \frac{m}{0.3} \\
50 &= m \\
\text{miles} &= m
\end{align*}
\]
3. A farmer wants to enclose a rectangular chicken coop with 600 feet of chicken wire. The farmer will use the barn as one of the sides of the chicken coop.

Find the equation for the area of the chicken coops. Start by making a table.

<table>
<thead>
<tr>
<th>Width</th>
<th>Length</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
\[ C_B = 40 \quad m_B = 0 \]

\[ C_S = 0.30m + 25 \]

\[ m_S = 0.3 \quad m_c \]

\[
\begin{array}{c|c}
\text{Slope} & \text{Value} \\
0 & 25 \\
50 & 40 \\
25 & 32.50
\end{array}
\]

Brown > Sloane
Sloane > Brown

\[ m < 50 \]

\[ m > 50 \]
Brighten Up Company makes overhead projectors. The cost of making \( x \) projectors per month is

\[
C = 0.3x^2 - 65x + 800
\]

and the revenue from selling \( x \) projectors per month is

\[
R = -0.7x^2 + 25x.
\]

\( C \) and \( R \) are in hundreds of dollars.
Vertex:

Meaning:

X intercepts:

Meaning:

P intercept:

Meaning:
5. A cannon ball is shot straight up into the air. The height of the cannon ball is given by the equation

\[ h = -16t^2 + 480t \]  \( h \) is in feet and \( t \) is in seconds

The graph of the equation is given below.
a. When will the height of the cannon ball be 2000 feet?
   (Hint: you must use algebra to find the points of intersection.)

b. Graph the line $h = 2000$ on the graph above and label the points of intersection.
6. Simplify: \(4(3x^2 - 7x + 5) - 3(5x^2 + x - 6)\)
Mat-011::Agenda::Day 22::June 24, 2004
• Review for Test 4
• Homework::Topic 35::p 342
$(x + 5)^2$
8. Factor.
   a. \[16x^2 - 2x\]
\[ x^2 - x - 6 \]
\( x^2 - 25 \)
Solve for $x$:

$x^2 + 10x - 11 = 0$