Give the equation for logs.

Log to exponential and then exponential to log.

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$$17.28 = (8.6 - y) y$$
$$17.28 = 8.6y - y^2$$
$$y^2 - 8.6y + 17.28 = 0$$

$P = 2x + 2y \qquad A = xy$

$17.2 = 2x + 2y \qquad 17.28 = xy$

$\dfrac{2x}{2} = \dfrac{17.2}{2} - \dfrac{2y}{2}$

$x = (8.6 - y)$

$y = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$y = \dfrac{8.6 \pm \sqrt{8.6^2 - 4(1)(17.28)}}{2(1)}$

$\underline{y = 5.4} \qquad y = 3.2$

$xy = 17.28$

$x = \dfrac{17.28}{5.4} = 3.2$

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$$\begin{array}{cccc} x & y & z & \# \\ \end{array}$$
$$\begin{bmatrix} 1 & -5 & 0 & | & 3 \\ 0 & 0 & 1 & | & 3 \\ 0 & 0 & 0 & | & 0 \end{bmatrix}$$

$x - 5y = 3 \qquad x = \underline{5y + 3}$

$z = 3 \qquad$ Infinite #

$0 = 0 \qquad y = y$

$\qquad\qquad z = 3$

$(x, y, z) = (5y + 3, y, 3)$

$$\begin{array}{cccc} x & y & z & \# \\ \end{array}$$
$$\begin{bmatrix} 1 & 2 & 0 & | & 3 \\ 0 & 0 & 1 & | & 2 \\ 0 & 0 & 0 & | & 5 \end{bmatrix}$$

$1x + 2y = 3$

$z = -2 \qquad$ No Solution

$\underline{0 = 5}$

$$\begin{bmatrix} 1 & 0 & 0 & | & 4 \\ 0 & 1 & 0 & | & 2 \\ 0 & 0 & 1 & | & 1 \end{bmatrix}$$

$x = 4$
$y = 2$
$z = 1$

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$A = \begin{bmatrix} 430 & 460 & 450 \\ 630 & 610 & 640 \\ 540 & 490 & 530 \end{bmatrix}$

BA

$\begin{matrix} & B & L & M \\ \textcircled{B} [.80 \;.50\; 1.30] \cdot & \begin{bmatrix} 430 & 460 & 450 \\ 630 & 610 & 640 \\ 540 & 490 & 530 \end{bmatrix} \end{matrix}$

$\textcircled{A} \; \textcircled{1} \times 3 \quad 3 \times \textcircled{3}$

$B = [.80 \;\; .50 \;\;\; 1.30]$

$BA = \quad 344 + 315 + 702$
$\qquad\qquad 368 + 305 + 637$
$\qquad\qquad 360 + 320 + 689$

$\begin{bmatrix} 1361 & 1310 & 1369 \end{bmatrix}$

$\textcircled{C} \quad \$1310$

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Grade A   1728   Grade B   1760

Profit - Max
$\boxed{P = 1x + 5y}$

×Economy   ×Superior

$2x + 9y \le 1728 \qquad 10x + 2y \le 1760$

x	y			x	y
864	0			176	0
0	192			0	880

$y \ge 0$

(0,0)	0
(176,0)	176
(0,192)	960
(144,160)	944

$x \ge 0$

$-5(2x + 9y \le 1728)$
$10x + 2y \le 1760$
$\qquad -45y \le -8640$
$\qquad \dfrac{-43y}{-43} \le \dfrac{-8640}{-43}$

$x = 144 \quad y = 160$
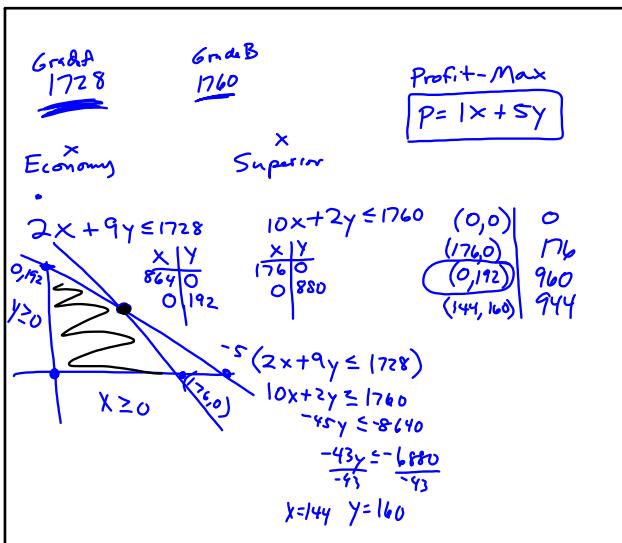
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$\dfrac{12}{x^3 - 2x^2}$

$x^2(x - 2)$

$\dfrac{12}{x^2(x-2)} = \dfrac{A}{x} + \dfrac{B}{x^2} + \dfrac{C}{x-2}$

$\underset{\textcircled{-3}}{\dfrac{}{x}} + \underset{\textcircled{?}}{\dfrac{}{x^2}} + \underset{\textcircled{3}}{\dfrac{}{x-2}}$

$12 = Ax(x-2) + B(x-2) + Cx^2$

$12 = Ax^2 - 2Ax + Bx - 2B + Cx^2$

$12 = \underline{Ax^2 + Cx^2} - 2Ax + Bx - 2B$

$x^2 \; x \; \#$
$0 \; 0 \; 12 = x^2(A + c) + x(-2A + B) - 2B$

$A + C = 0 \qquad -2A + B = 0 \qquad 12 = -2B$
$-3 + C = 0 \qquad -2A - 6 = 0 \qquad B = -6$
$C = 3 \qquad\quad -2A = 6$
$\qquad\qquad\quad A = -3$

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