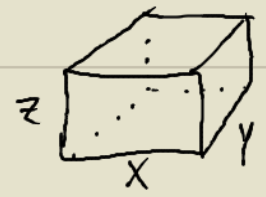
3.



$C = .05(yz + xz) + .10(xy)$

$C = .1(yz + xz) + .1xy$

$xyz = 1000$

$z = \frac{1000}{xy}$

$C = .1\left(y\left(\frac{1000}{xy}\right) + x\left(\frac{1000}{xy}\right)\right) + .1xy$

$C = \frac{100}{x} + \frac{100}{y} + .1xy$

$C = 100x^{-1} + 100y^{-1} + .1xy$

$C_x = -100x^{-2} + .1y$

$\frac{-100}{x^2} + .1y = 0$

$.1y = \frac{100}{x^2}$

$y = \frac{1000}{x^2}$

$C_y = -100y^{-2} + .1x$

$\frac{-100}{y^2} + .1x = 0$

$.1x = \frac{100}{y^2}$

$x = \frac{1000}{y^2}$

$x = \frac{1000}{\left(\frac{1000}{x^2}\right)^2}$

$x = \frac{1000}{\frac{1000(1000)}{x^4}}$

$x = \frac{1}{\frac{1000}{x^4}}$

$x = \frac{x^4}{1000}$

$1000x = x^4$

$0 = x^4 - 1000x$

$0 = x(x^3 - 1000)$

~~$x = 0$~~

$x^3 - 1000 = 0$

$x^3 = 1000$

$x = \sqrt[3]{1000}$

$x = 10$

$y = \frac{1000}{x^2}$

$y = \frac{1000}{10^2}$

$y = 10$

$z = \frac{1000}{xy}$

$z = \frac{1000}{10(10)}$

$z = 10$

$C = \frac{100}{x} + \frac{100}{y} + .1xy$

$C = \frac{100}{10} + \frac{100}{10} + .1(10)(10)$

$C = \$30$