7. $200 - X = 90 + X$

$200 - 90 = X + X$

$110 = 2X$

$55 = X$

$Q = 55$

$P = 90 + X$

$P = 90 + 55$

$P = 145$

PRICE

$$CS = \int_0^{55} (200 - X) - (145)\, dX$$

$$= \int_0^{55} (200 - X - 145)\, dX$$

$$= \int_0^{55} (-X + 55)\, dX$$

$$= \left[-\frac{1}{2}X^2 + 55X \right]_0^{55}$$

$$= \left(-\frac{1}{2}(55)^2 + 55(55) \right) - \left(-\frac{1}{2}(0)^2 + 55(0) \right)$$

$$= \$1512.50$$

$$PS = \int_0^{55} (145) - (90 + X)\, dX$$

$$= \int_0^{55} (145 - 90 - X)\, dX$$

$$= \int_0^{55} (-X + 55)\, dX$$

$$= \$1512.50$$