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1) 200,000 hours of labor.

Wage = $15/hour

=) Oppor Cost = 200,000 × 15 = $3,000,000

Wage$'_{unemployed}$ = $10/hour.

. at 90% employed worker: OC = 180,000 × 15 + 20,000 × 10
= $2,900,000

. at 10% employed: OC = 20,000 × 15 + 180,000 × 10
= $2,100,000

=) Proportions of unemployed workers increases, OC decreases.

2) 250,000 hours of labor.
Wage = $25/hour.

a) =) Oppor Cost = 25 × 250,000 = $6,250,000

b)
Wage$_{unemployed}$ = $16/hour

. at 90% employed: OC = 225,000 × 25 + 25,000 × 16
= 6,025,000

. at 10% employed: OC = 225,000 × 16 + 25,000 × 25
= 4,225,000

=) Proportion of unemployed workers ↑, OC ↓

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Exercise 1.3)

180,000 hours of labor ; wage = $18

a) ⇒ OpporCost = 18 × 180,000 = $ 3,240,000

b) $Wage_{unemployed}$ = $10

. at 90% employed : OC = 162,000 × 18 + 18,000 × 10

= $3,096,000

. at 10% employed : OC = 18,000 × 18 + 162,000 × 10

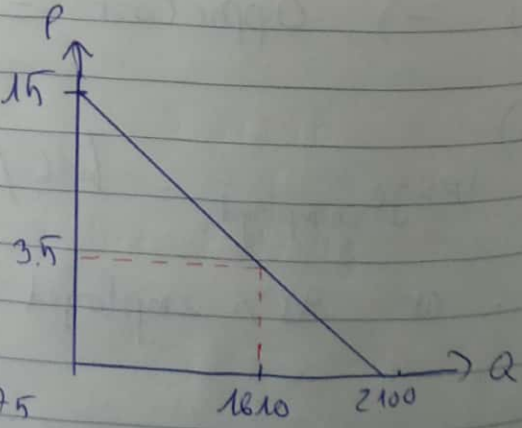
= $ 1,944,000

⇒ Proportions of unemployed workers ↑, OC ↓

Exercise 2.1

Q = 2100 − 140P.

toll = $3.5



. plan ~~N~~ M : CS = $\frac{15 \times 2100}{2}$ = 15,750

. plan N CS = $\frac{(15-3.5) \times 1610}{2}$ = 92575

⇒ plan M is more efficient

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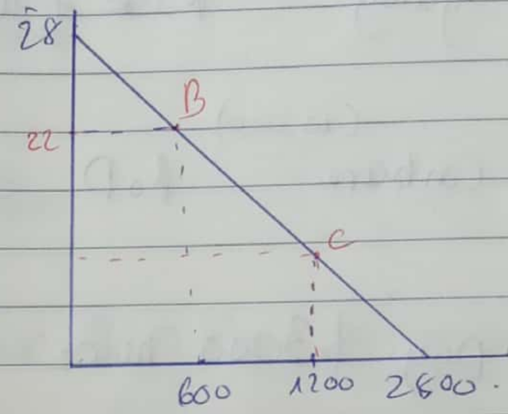
Exercise 2.2

$Q = 2800 - 100P$



plan A: $CS = \frac{28 \times 2800}{2} = 39200$

plan B toll $= \$22$

$CS = \frac{(28-22) \times 600}{2} = 1800$

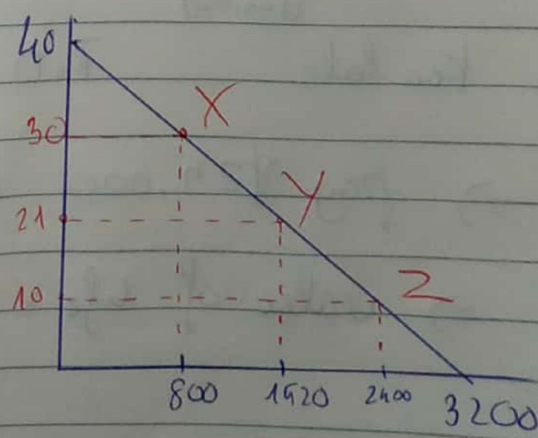
plan C toll $= \$16$

$CS = \frac{(28-16) \times 1200}{2} = 7200$

$\Rightarrow$ plan A = most surplus = most efficient.

Exercise 2.3

$Q = 3200 - 80P$



Plan X: toll $= \$30$

$CS = \frac{(40-30) \times 800}{2} = 4000$

plan Y, toll $= 21$

$CS = \frac{(40-21) \times 1520}{2} = 14,440$

plan Z, toll $= 10 \Rightarrow CS = \frac{(40-10) \times 2400}{2} = 36000$

highest surplus $\Rightarrow$ most efficient

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Exercise 3.1

Sydney (13,000) : Risk of death $= \frac{1}{25000} = 0.00004$.

Canberra (10,000) RoD $= \frac{1}{15000} = 0.000067$

pay \$3000 more to go to Sydney

$\Rightarrow$ pay \$3000 for 0.000027 $\left(\frac{1}{37500}\right)$ reduction in ROD

$\Rightarrow$ value of life $=$ ~~\$111111111~~.

$= \$1,125,000.00$

Exercise 3.2

. Putrajaya (\$20,000) : RoD $= \frac{1}{5000} = 0.0002$.

. Kualala (\$45,000) : RoD $= \frac{1}{20,000} = 0.00005$.

$\Rightarrow$ pay \$25,000 more to reduce ROD by 0.00015.

$\Rightarrow$ value of life $= \frac{25000}{0.00015} =$ ~~16666666~~

$= \$166,666,666.7$

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Exercise 3.3

. Habnava (33,000) RoD $= \frac{1}{19000}$

. Bern (44,000) RoD $= \frac{1}{27000}$

$\Rightarrow$ pay \$11,000 more to lower RoD by $\frac{1}{64125}$

$\Rightarrow$ value of life $=$ \$705,375,000

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