

Solutions

2.1

Multiply the rate by hours worked.

$$G = ph = 18(7) = 126 \text{ units}$$

Gross pay 126.

2.2

Divide each total by its count.

$$u_A = C_A/n_A = 30/12 = 2.50$$

$$u_B = C_B/n_B = 46/20 = 2.30$$

The 20-pack costs less per notebook. Both prices and the conclusion earn A1.

2.3

Apply the discount to the item before adding the fee.

$$T = P(1 - r) + F = 200(0.85) + 6 = 176$$

Total 176.

$$s = \frac{P - T}{P} \times 100\% = \frac{200 - 176}{200} \times 100\% = 12\%$$

Overall saving 12%.

2.4

Calculate the percentage and fixed parts.

$$D = rG + F = 0.10(360) + 8 = 44$$

Deduction 44.

$$N = G - D = 360 - 44 = 316$$

Net pay 316.

3.1

Regular pay uses regular hours.

$$R = h_rp = 35(16) = 560$$

Regular pay 560.

$$O = h_o k p = 5(1.5)(16) = 120$$

Overtime pay 120.

$$C = rS = 0.03(1200) = 36$$

Commission 36.

$$G = R + O + C = 560 + 120 + 36 = 716$$

Gross pay 716.

$$N = G - D = 716 - 22 = 694$$

Net pay 694.

3.2

(a) Discount A before adding delivery.

$$T_A = P(1 - r_A) + F = 500(0.80) + 30 = 430$$

A total 430. Apply B's multipliers successively.

$$T_B = P(1 - r_1)(1 - r_2) = 500(0.90)(0.90) = 405$$

B total 405.

$$\Delta = T_A - T_B = 430 - 405 = 25$$

B is cheaper by 25.

(b) The second discount uses the reduced base; the combined multiplier is 0.81, a 19% reduction.

(c) A must satisfy $400 + F \leq 405$.

$$F \leq T_B - 0.80P = 405 - 400 = 5$$

Largest delivery fee 5 units. The conclusion depends on the stated identical item and absence of other charges.