



Let $l_1 + l_2 = L$ [axle distance]

Lifting from front - reaction about rear axle

$$P_f(l_1 + l_2 + l_3) = P(l_3)$$

Lifting from rear - reaction about front axle

$$P_r(l_2 + l_3 + l_4) = P(l_2)$$

Adding both formulas

$$P(l_3) + P(l_2) = P_f(l_1 + l_2 + l_3) + P_r(l_2 + l_3 + l_4)$$

$$P(l_2 + l_3) = P_f(l_1 + l_2 + l_3) + P_r(l_2 + l_3 + l_4)$$

$$P(L) = P_f(l_1 + L) + P_r(L + l_4)$$

$$P = \frac{P_f(l_1 + L) + P_r(L + l_4)}{L}$$

$$P_f = 1637 \text{ lbs}$$

$$l_1 = 43 \text{ in}$$

$$P_r = 2728 \text{ lbs}$$

$$l_4 = 18 \text{ in}$$

$$L = 114 \text{ in}$$

$$P = \frac{(1637 \text{ lbs})(43 \text{ in} + 114 \text{ in}) + (2728 \text{ lbs})(114 \text{ in} + 18 \text{ in})}{114 \text{ in}}$$

$$= 5413.2 \text{ lbs}$$