

SECT.	AREA	\bar{x}	$A\bar{x}$
RECTAB	$(900 \frac{N}{m})(3m) = 2700N.$	$\frac{1}{2}(3m) = 1.5m.$	$4050 N\cdot m.$
TRIANGLE _{BC}	$\frac{1}{2}(1m)(900 \frac{N}{m}) = 450N.$	$3m + \frac{1}{3}(1m) = 3.33m$	$1499.85 N\cdot m.$
	$\Sigma A = 3150N.$		$\Sigma A\bar{x} = 5549.85$

$$x_c = \frac{\Sigma A\bar{x}}{\Sigma A} = \frac{5549.85 N\cdot m}{3150 N} = 1.76 m = x_c$$

$$F_{conc} = 3150 N = \Sigma A$$

$$\Sigma F_x = 0 = R_{Ax} \quad \checkmark \quad \curvearrowright$$

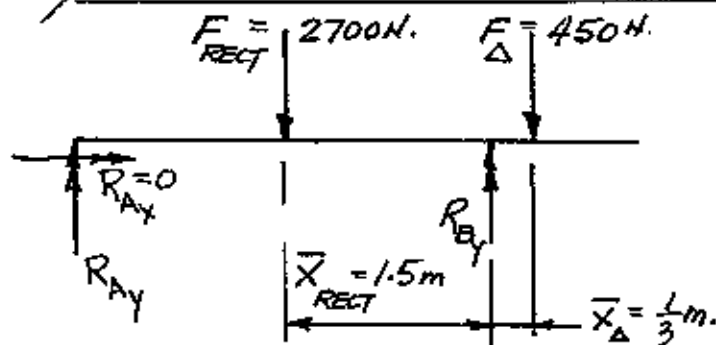
$$\Sigma F_y = 0 = -3150 N + R_{Ay} + R_{By}$$

$$\Sigma M_A = 0 = -3150 N (1.76 m) + R_{By} (3m)$$

$$\therefore R_{By} = \frac{3150 N (1.76 m)}{3m} = 1848 N = R_{By} \uparrow$$

$$\therefore R_{Ay} = 3150 - R_{By} = 1302 N = R_{Ay} \uparrow$$

ALTERNATE APPROACH



$$\Sigma F_x = 0 = R_{Ax} \quad \checkmark$$

$$\Sigma F_y = 0 = -2700 N - 450 N + R_{Ay} + R_{By}$$

$$\therefore R_{By} = 1850 N \uparrow$$

$$\Sigma M_B^r = 0 = -R_{Ay} (3m) + (2700 N)(1.5m) - (450 N)(\frac{1}{3}m)$$

$$R_{Ay} = \frac{4050 Nm - 150 Nm}{3m} = 1300 N = R_{Ay} \uparrow$$