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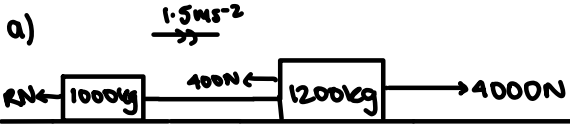
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# Problem Solving Set A

## Bronze



$$4000 - 400 - R = 2200(1.5)$$

$$3600 - R = 3300$$

$$R = 300\text{N}$$

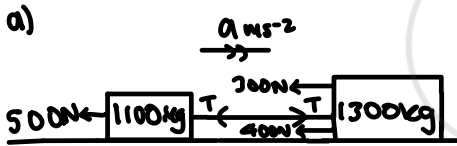
b)

$$T - 300 = 1000(1.5)$$

$$T = 1500 + 300$$

$$T = 1800\text{N}$$

## Silver



$$F = ma$$

$$\cancel{T} - 300 - 400 - 500 = (1100 + 1300)a$$

$$-1200 = 2400a$$

$$a = -0.5\text{ms}^{-2}$$

S

u 12

v 0

a -0.5

T

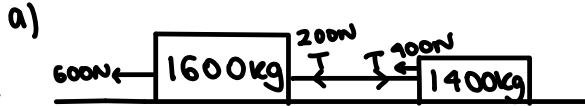
$$v = u + at$$

$$0 = 12 + (-0.5)t$$

$$-0.5t = -12$$

$$t = 24\text{s}$$

## Gold



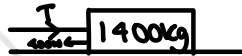
$$F = ma$$

$$\cancel{T} - T - 400 - 600 - F = 3000a$$

$$-1000 - F = 3000a$$

$$F = 3000a - 1000$$

car



$$T - 400 - F = 1400a$$

$$-200 - F = 1400a$$

$$F = 1400a - 200$$

$$3000a - 1000 = 1400a - 200$$

$$1600a = 800$$

$$a = 0.5\text{ms}^{-2}$$

$$3000(0.5) - 1000 = 500\text{N}$$

b) F will increase

b) It would be unlikely because the resistance decreases so the speed decreases.