VECTOR TESTS MEMORANDUM

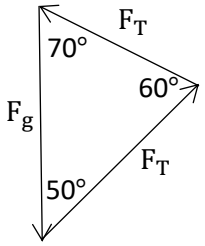
QUESTION 1:

1.1) A.
1.2) A.
1.3) A.
1.4) A.
1.5) A.

QUESTION 2:

2.1) Forces are in equilibrium

$\frac{\sin 60}{F_g} = \frac{\sin 50}{T_1}$, $T_1 = \frac{\sin 50.F_g}{\sin 60}$



(5)

2.2) $F_g = mg$
= (2 x 9,8) = 19,6 N.

$T_1 = \frac{\sin 50.(19,6)}{\sin 60}$ = 17,337..N

$T_2 = 3 \times T_1$ = 52,01N (3)

QUESTION 3:

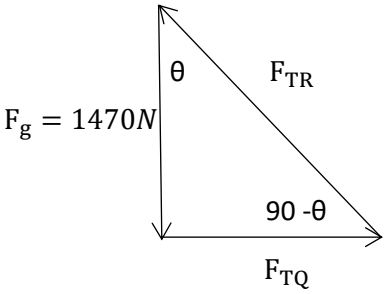
3.1) F_x = 80 N (1)
3.2)
$\cos 30° = \frac{F_x}{F_R}$

F_R = 92,38 N. (3)

QUESTION 4:

Traingele forces in equilibrium:

Forces are in Equilibrium



Tenion force R = $\frac{4410\ (Q)}{\sin 71{,}57°}$ = 4648,41N

$\tan\theta = \frac{Q}{F_g}$

But Q = $3F_g$

$\tan\theta = \frac{3\,F_g}{F_g}$ d.w.s $\theta = 71\,,57°$. Therfore the angle between the force, R and the wall is: R = 90° – 71,57° = 18,43° (6)