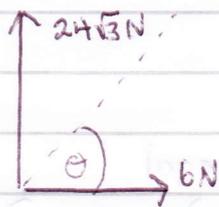


## Grymoedd

### Gaeaf 2006

b) Llorweddol:  $3 + 16 \cos 60^\circ - 10 \cos 60^\circ$   
 $= 6 \text{ N}$

Fertigol:  $11\sqrt{3} + 16 \sin 60^\circ + 10 \sin 60^\circ$   
 $= 24\sqrt{3} \text{ N}$



Grym cyteffwrth: Maint =  $\sqrt{6^2 + (24\sqrt{3})^2}$   
 $= 42 \text{ N}$

Cyfeiriad:  $\tan \theta = \frac{24\sqrt{3}}{6}$

$\theta = 81.8^\circ$  : un lle degol

### Gaeaf 2007

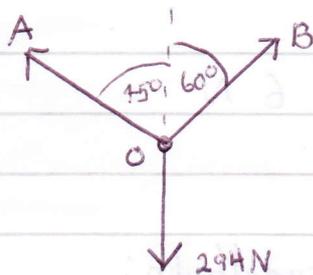
2) a)  $T = 30g$   
 $= 294 \text{ N}$

$F = ma$   
yn fertigol

c) Llorweddol yn O:  
 $A \sin 45^\circ = B \sin 60^\circ$

$$\frac{A}{\sqrt{2}} = \frac{B\sqrt{3}}{2}$$

$$A = \frac{\sqrt{6}}{2} B$$



Fertigol yn O:

$$294 = A \cos 45^\circ + B \cos 60^\circ$$

$$294 = \frac{A}{\sqrt{2}} + \frac{B}{2}$$

$$294 = \frac{\sqrt{6}}{2} \left( \frac{1}{\sqrt{2}} \right) B + \frac{B}{2}$$

$$294 = \left( \frac{1 + \sqrt{3}}{2} \right) B$$

$B = 215.22 \text{ N}$  ; 2 i. d.

$A = \frac{\sqrt{6}}{2} (215.22)$

$A = 263.59 \text{ N}$  ; 2 i. d.

## Haf 2007

\* 3) Cydrannu'n llorweddol:

$$40 + 60 \cos 80^\circ = 50 \cos 60^\circ + T \cos \theta$$

$$25.41889066 = T \cos \theta \quad \text{--- (1)}$$

Cydrannu'n fertigol:

$$60 \sin 80^\circ + 50 \sin 60^\circ = T \sin \theta$$

$$102.3897354 = T \sin \theta \quad \text{--- (2)}$$

$$\text{(2)} \div \text{(1)}: \quad \frac{102.3897354}{25.41889066} = \frac{T \sin \theta}{T \cos \theta}$$

$$4.028096141 = \tan \theta$$

$$\theta = 76.1^\circ \text{ i un lle degol}$$

Amnewid i (1):  $25.41889066 = T \cos(76.0578281\dots)$

$T = 105.5 \text{ N}$  i un lle degol

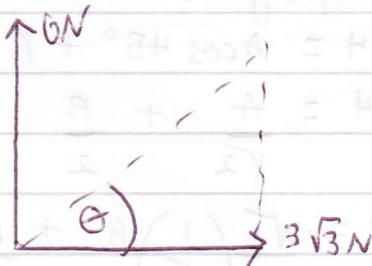
## Gaeaf 2008

\* 8) Cydrannu'n llorweddol:

$$15 \cos 30^\circ - 9 \cos 30^\circ = 3\sqrt{3} \text{ N}$$

Cydrannu'n fertigol:

$$18 - 15 \sin 30^\circ - 9 \sin 30^\circ = 6 \text{ N}$$



Gryn cydeffwrth:

$$\text{Maint} = \sqrt{6^2 + (3\sqrt{3})^2}$$

$$= 7.94 \text{ N} \text{ i 2ld, } (\sqrt{63})$$

Cyfeiriad:  $\tan \theta = \frac{6}{3\sqrt{3}}$

$$\theta = 49.1^\circ \text{ i un ll.d.}$$

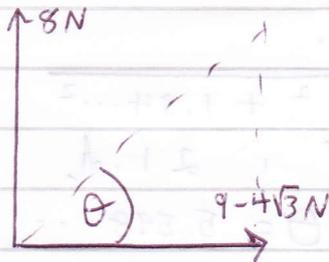
Haf 2008

9) Cydrannu'n fertigol:

$$12 - 8 \cos 60^\circ = 8 \text{ N}$$

Cydrannu'n llorweddol:

$$9 - 8 \sin 60^\circ = 9 - 4\sqrt{3} \text{ N}$$



Grym cydeffwrth:

$$\text{Maint} = \sqrt{8^2 + (9 - 4\sqrt{3})^2}$$

$$= 8,26 \text{ N} \quad \text{i} \quad 21^\circ \text{d,}$$

Cyferriad:  $\text{Tan } \theta = \frac{8}{9 - 4\sqrt{3}}$

$$\theta = 75,5^\circ \quad \text{i} \quad 11^\circ \text{d,}$$

Graef 2009

8) Cydrannu'n fertigol:

$$12g = X \sin 23^\circ + Y \sin 30^\circ$$

$$117,6 = 0,3907 X + 0,5 Y$$

$$235,2 = 0,7815 X + Y \quad \text{--- (1)}$$

Cydrannu'n llorweddol:

$$X \cos 23^\circ = Y \cos 30^\circ$$

$$0,9205 X = 0,8660 Y$$

$$X = 0,9408 Y \quad \text{--- (2)}$$

Amnewid o (2) i (1)

$$235,2 = 0,7815(0,9408 Y) + Y$$

$$235,2 = 1,7352 Y$$

$$Y = 135,5 \text{ N} \quad \text{i} \quad 111^\circ \text{d,}$$

$$X = 0,9408(135,5)$$

$$X = 127,5 \text{ N} \quad \text{i} \quad 111^\circ \text{d,}$$

Haf 2009

8000 2009

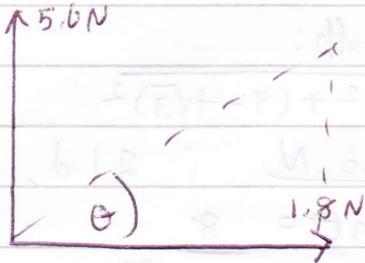
8) Cydrannu'n ferbigol:

$$5 \sin 50^\circ + 7 \sin 30^\circ - 2 \sin 60^\circ = 5.598171408 \text{ N}$$

Cydrannu'n llorweddol:

$$7 \cos 30^\circ - 5 \cos 50^\circ - 2 \cos 60^\circ = 1.848239778 \text{ N}$$

5.6 N



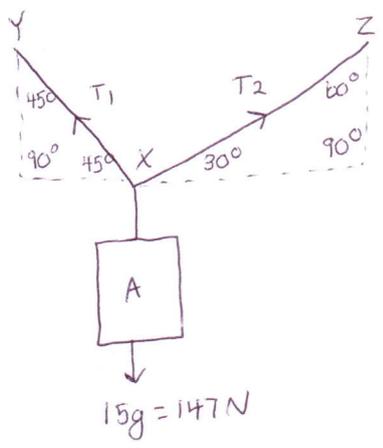
Grym cydeffwrth:

$$\text{Maint} = \sqrt{5.59\dots^2 + 1.84\dots^2} = 5.90 \text{ N} \quad ; \quad 21.1^\circ$$

$$\text{Cyfeiriad: } \tan \theta = \frac{5.598\dots}{1.848\dots}$$

$$\theta = 71.7^\circ \quad ; \quad 111.1^\circ$$

(4)



Cydrannu'n llorweddol:

$$T_1 \cos 45^\circ = T_2 \cos 30^\circ$$

$$T_1 \left(\frac{1}{\sqrt{2}}\right) = T_2 \left(\frac{\sqrt{3}}{2}\right)$$

$$T_1 = T_2 \left(\frac{\sqrt{6}}{2}\right)$$

Cydrannu'n fertigol:

$$147 = T_1 \sin 45^\circ + T_2 \sin 30^\circ$$

$$147 = T_1 \left(\frac{1}{\sqrt{2}}\right) + T_2 (0.5)$$

$$147 - 0.5 T_2 = \frac{T_1}{\sqrt{2}}$$

$$147\sqrt{2} - 0.5\sqrt{2} T_2 = T_1$$

Felly  $T_2 \left(\frac{\sqrt{6}}{2}\right) = 147\sqrt{2} - 0.5\sqrt{2} T_2$

$$T_2 \left(\frac{\sqrt{6}}{2} + \frac{\sqrt{2}}{2}\right) = 147\sqrt{2}$$

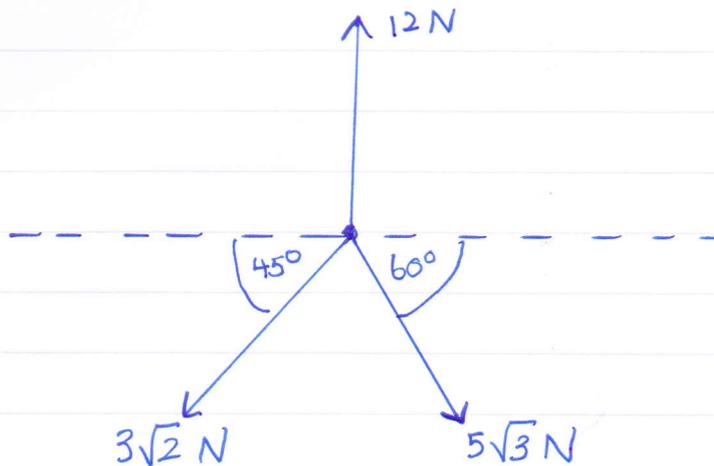
$$T_2 = 147\sqrt{2} \left(\frac{2}{\sqrt{6} + \sqrt{2}}\right)$$

$T_2 \approx 107.61 N$  i 2 ie degol

$$T_1 = 147\sqrt{2} \left(\frac{2}{\sqrt{6} + \sqrt{2}}\right) \left(\frac{\sqrt{6}}{2}\right)$$

$T_1 \approx 131.80 N$  i 2 ie degol

⑥

Llorweddol ( $\rightarrow$ )

$$5\sqrt{3}\cos 60^\circ - 3\sqrt{2}\cos 45^\circ$$

$$= \frac{5\sqrt{3}}{2} - 3$$

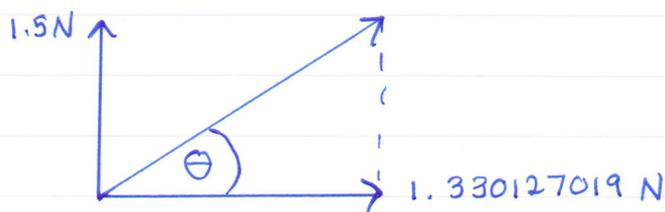
$$= 1.330127019 \text{ N}$$

Fertigol ( $\uparrow$ )

$$12 - 3\sqrt{2}\sin 45^\circ - 5\sqrt{3}\sin 60^\circ$$

$$= 12 - 3 - 7.5$$

$$= 1.5 \text{ N}$$



$$\text{Maint y grym cydeffaith} = \sqrt{1.5^2 + 1.330127019^2}$$

$$= 2.004803703$$

$$= 2.00 \text{ N, yn gywir i 2 le degol.}$$

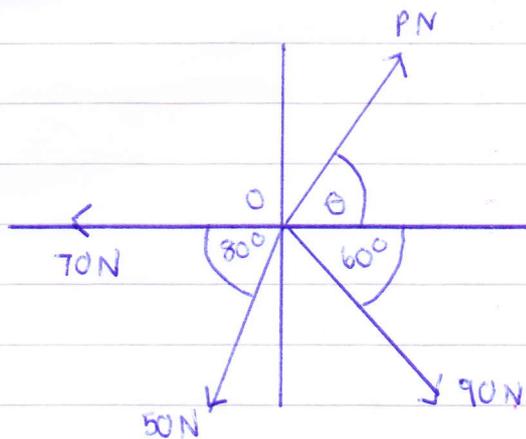
Cyfeiriad y grym cydeffaith i'r llorweddol:

$$\tan \theta = \frac{1.5}{1.330127019}$$

$$\theta = 48.43^\circ, \text{ yn gywir i 2 le degol}$$

Gaeaf 2011

5)



(Mewn cydbwysedd.)

Llorweddol: Grymoedd i'r dwith = Grymoedd i'r dde

$$70 + 50 \cos 80^\circ = 90 \cos 60^\circ + P \cos \theta$$
$$78.6824 = 45 + P \cos \theta$$
$$33.6824 = P \cos \theta \quad \text{--- (1)}$$

Fertigol: Grymoedd i fyny = Grymoedd i lawr

$$P \sin \theta = 50 \sin 80^\circ + 90 \sin 60^\circ$$
$$P \sin \theta = 49.2404 + 77.9423$$
$$P \sin \theta = 127.1827 \quad \text{--- (2)}$$

Yn gwneud (2)  $\div$  (1):

$$\frac{P \sin \theta}{P \cos \theta} = \frac{127.1827}{33.6824}$$

$$\tan \theta = 3.7759$$

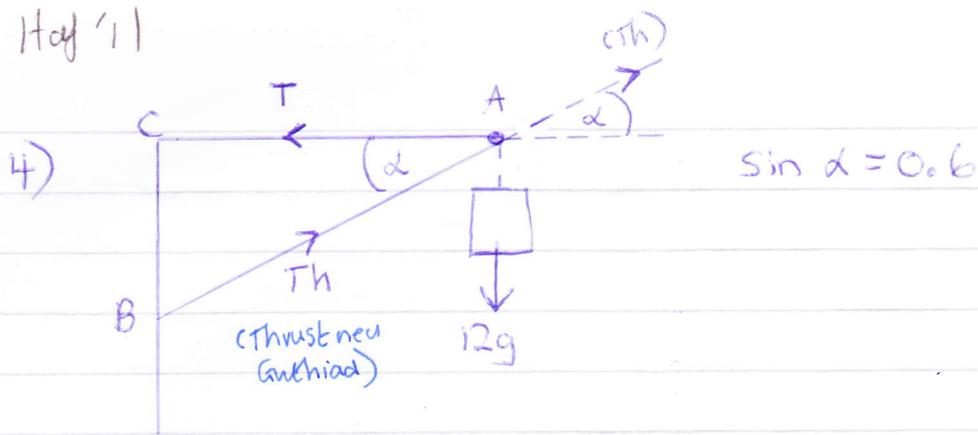
$$\theta = \underline{\underline{75.2^\circ}} \quad \text{i un lle degol}$$

Felly, yn amnemiid yn ôl i (1),  $P = \frac{33.6824}{\cos \theta}$

$$P = \frac{33.6824}{\cos(75.166618\dots)}$$

$$P = \underline{\underline{131.6 \text{ N}}} \quad \text{i un lle degol}$$

Haf '11



- (a) Gyda'r pwynt A, grymoedd i fyny = grymoedd i lawr
- $$(Th) \sin \alpha = 12g$$
- $$(Th) \times 0.6 = 12 \times 9.8$$
- $$\underline{Th = 196N}$$

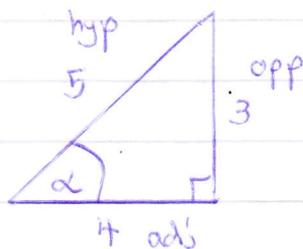
Y gwrthiad yn y rhodlen AB yw 196N.

- (b) Gyda'r pwynt A, grymoedd i'r dde = grymoedd i'r chwith
- $$(Th) \cos \alpha = T$$
- $$196 \times \cos \alpha = T$$
- $$196 \times 0.8 = T$$
- $$\underline{T = 156.8N}$$

Y tensiwn yn y rhodlen AC yw 156.8N

(Sut i gael  $\cos \alpha = 0.8$ ;

O wybod bod  $\sin \alpha = 0.6$  neu  $\sin \alpha = \frac{3}{5}$



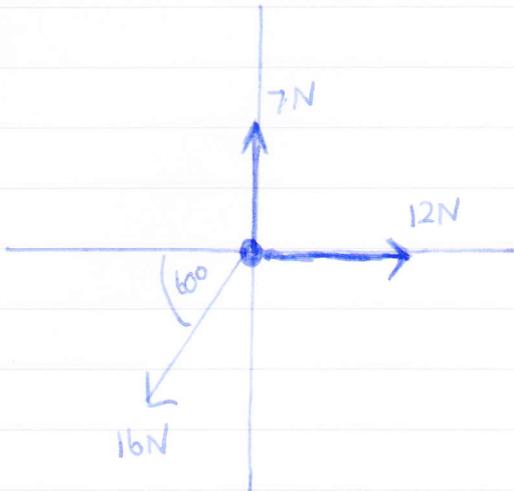
Pythagoras!

$$\sqrt{5^2 - 3^2} = 4$$

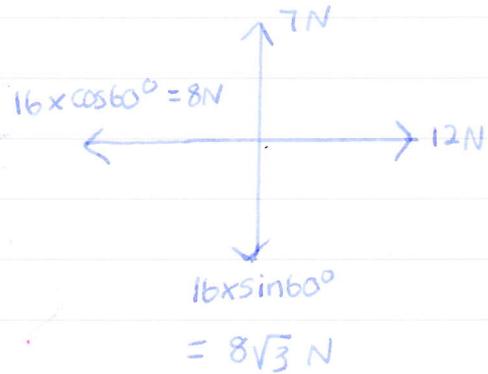
Felly  $\cos \alpha = \frac{4}{5}$  neu  $\cos \alpha = 0.8$ ).

Gwaed '12

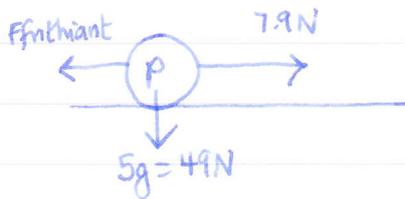
b)



(a) Cydrannu:



(b)

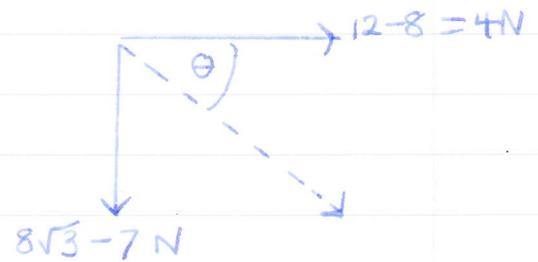


$$\begin{aligned} \text{Ffrithiant} &= \mu R \\ &= 0.1 \times 5g \\ &= 4.9 \text{ N} \end{aligned}$$

$F = ma$  ar  $P$   
(i'r dde yn positif)

$$\begin{aligned} 7.9 - 4.9 &= 5a \\ 3 &= 5a \\ \underline{a} &= \underline{0.6 \text{ ms}^{-2}} \end{aligned}$$

~~(b)~~ Symleiddio:



Gryn cydeffailh:

$$\begin{aligned} \text{Maint} &= \sqrt{4^2 + (8\sqrt{3} - 7)^2} \\ &= \sqrt{16 + 47.0103} \\ &= 7.9379 \text{ N ; 4 lle degol} \end{aligned}$$

(Felly yn fras 7.9 N ✓)

Cyfeiriad:  $\tan \theta = \frac{\text{cyferbyn}}{\text{agos}}$

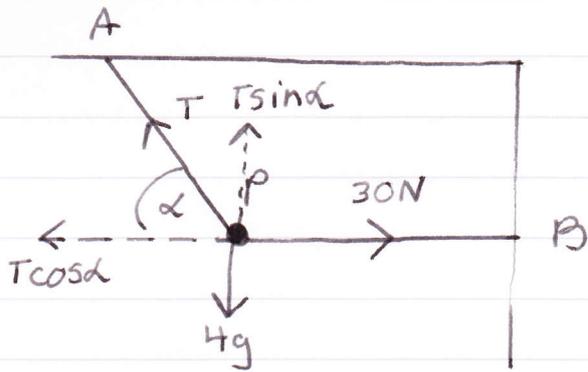
$$\tan \theta = \frac{8\sqrt{3} - 7}{4}$$

$$\theta = \tan^{-1} \left( \frac{8\sqrt{3} - 7}{4} \right)$$

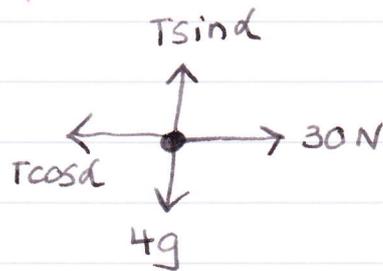
$$\theta = 59.7409^\circ ; 4 \text{ lle degol.}$$

M1 Haf 2012

⑥



Grymoedd yn gweithredu ar P:



Lbrweddol:  $T \cos \alpha = 30$  —①      Fertigol:  $T \sin \alpha = 4g$  —②

Yn gwneud ② ÷ ①

$$\frac{T \sin \alpha}{T \cos \alpha} = \frac{4g}{30}$$

$$\tan \alpha = \frac{39.2}{30}$$

$$\alpha = \tan^{-1}\left(\frac{39.2}{30}\right)$$

$\alpha = 52.57^\circ$ , yn gywir i 2 le degol

Yn amnewid yn ôl i ①

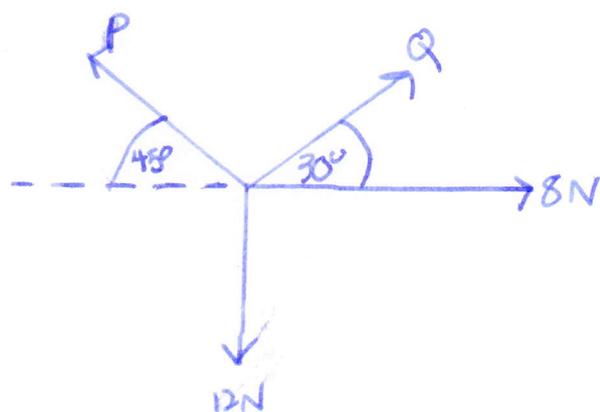
$$T \cos \alpha = 30$$

$$T \cos(52.57294864^\circ) = 30$$

$$T = 30 \div 0.6077508432$$

$T = 49.36 \text{ N}$ , yn gywir i 2 le degol

(4)



Cydrannu'n llorweddol:

Grymoedd i'r chwith = Grymoedd i'r dde

$$P \cos 45^\circ = Q \cos 30^\circ + 8$$

$$\frac{\sqrt{2} P}{2} = \frac{\sqrt{3} Q}{2} + 8$$

$$\sqrt{2} P = \sqrt{3} Q + 16 \quad \text{--- (1)}$$

Cydrannu'n fertigol:

Grymoedd i fyny = Grymoedd i lawr

$$P \sin 45^\circ + Q \sin 30^\circ = 12$$

$$\frac{\sqrt{2} P}{2} + \frac{Q}{2} = 12$$

$$\sqrt{2} P + Q = 24$$

$$\sqrt{2} P = 24 - Q \quad \text{--- (2)}$$

Gwelun o (1) a (2) bod  $\sqrt{3} Q + 16 = 24 - Q$

$$(\sqrt{3} + 1)Q = 24 - 16$$

$$Q = \frac{8}{1 + \sqrt{3}}$$

$$\underline{Q = 2.9 \text{ N}} \text{ i un lle degol}$$

Yn amnewid i (2):  $\sqrt{2} P = 24 - Q$

$$\sqrt{2} P = 24 - \frac{8}{1 + \sqrt{3}}$$

$$P = \frac{24 - \frac{8}{1 + \sqrt{3}}}{\sqrt{2}}$$

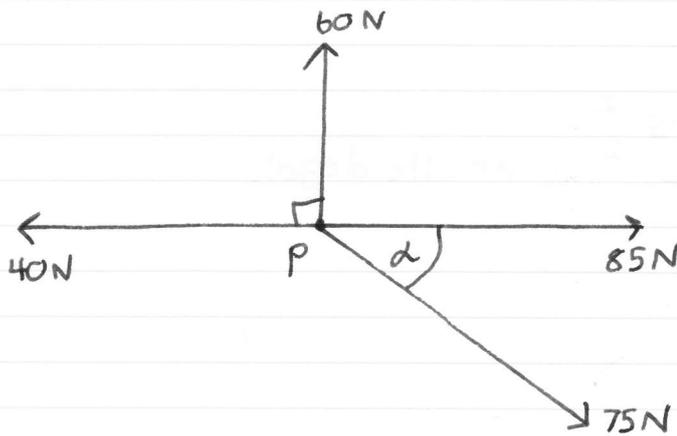
$\sqrt{2}$

$$P = -2\sqrt{6} + 14\sqrt{2}$$

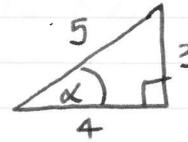
$$\underline{P = 14.9 \text{ N}} \text{ i un lle degol}$$

M1 Haf 2013

7)

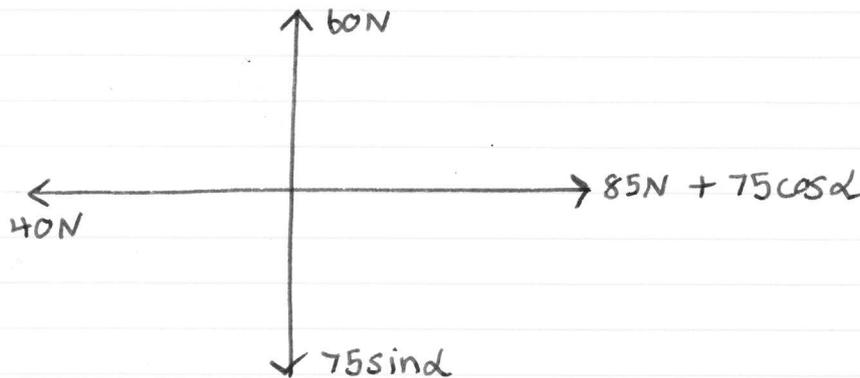


Màs 5Kg  
 $\tan \alpha = \frac{3}{4}$



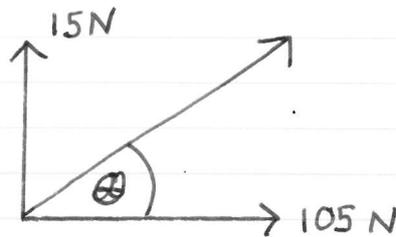
$$\sin \alpha = \frac{3}{5}$$
$$\cos \alpha = \frac{4}{5}$$

Cydrannu:



Fertigol:  $60 - 75 \sin \alpha = 60 - 75 \times \frac{3}{5}$   
 $= 15 \text{ N}$

Llorweddol:  $85 + 75 \cos \alpha - 40 = 85 + 75 \times \frac{4}{5} - 40$   
 $= 105 \text{ N}$



Grym cydeffai'th:  $\text{Maint} = \sqrt{15^2 + 105^2}$   
 $= 75\sqrt{2} \text{ N}$   
 $\approx 106.1 \text{ N}$  i un lle degol.

Cyfeiriad =  $\tan^{-1}\left(\frac{15}{105}\right)$

$= 8.13^\circ$  i ddau lle degol.

(Hun gywir ongl rhwng y grym cydeffai'th a'r grym 85 N.)

$$b) F = ma$$

$$75\sqrt{2} = 5a$$

$$a = \frac{75\sqrt{2}}{5}$$

$$a = 15\sqrt{2} \text{ ms}^{-2}$$

$$a \approx 21.2 \text{ ms}^{-2} \text{ i un lle degol.}$$

M1 Gaeaf 2014

⑤

Cydrannu'n Fertigol:

Grymoedd i fyny = Grymoedd i lawr (meun cydbwysedd)

$$Q = 9 \times \sin 60^\circ$$

$$Q = \frac{9\sqrt{3}}{2} \text{ N}$$

(i 2 le degol,  $Q = 7.79 \text{ N}$ )

Cydrannu'n Llorweddol:

Grymoedd i'r chwith = Grymoedd i'r Dde (meun cydbwysedd)

$$6 = P + 9 \times \cos 60^\circ$$

$$6 = P + 4.5$$

$$6 - 4.5 = P$$

$$P = \underline{1.5 \text{ N}}$$

M1 Haf 2014

⑤ (a) Nid yw'r gwrthrych yn symud yn fertigol (i fyny/lawr)

Felly grymoedd i fyny = grymoedd i lawr

$$20 \cos 30^\circ + T \sin 30^\circ = 28 \sin 60^\circ$$

$$\frac{20\sqrt{3}}{2} + \frac{T}{2} = \frac{28\sqrt{3}}{2}$$

$$20\sqrt{3} + T = 28\sqrt{3} \quad [\text{lluosi efo 2}]$$

$$T = 28\sqrt{3} - 20\sqrt{3}$$

$$\underline{T = 8\sqrt{3} \text{ N}} \quad \checkmark$$

(b)  $F = ma$  ar y gwrthrych, yn llorweddol,  $\rightarrow = +$  i f

$$20 \sin 30^\circ + T \cos 30^\circ + 28 \cos 60^\circ - 16 = 80a$$

$$20\left(\frac{1}{2}\right) + 8\sqrt{3}\left(\frac{\sqrt{3}}{2}\right) + 28\left(\frac{1}{2}\right) - 16 = 80a$$

$$10 + 4 \times 3 + 14 - 16 = 80a$$

$$20 = 80a$$

$$a = 20 \div 80$$

$$\underline{a = 0.25 \text{ ms}^{-2}}$$

(c) Ar ôl dileu'r grymoedd:

$F = ma$  ar y gwrthrych, yn llorweddol,  $\rightarrow = +$  i f

$$-16 = 80a$$

$$a = -16 \div 80$$

$$\underline{a = -0.2 \text{ ms}^{-2}}$$

O ddileu'r grymoedd nes cyrraedd buanedd  $4 \text{ ms}^{-1}$ :

$$s = ?$$

$$v = u + at$$

$$u = 12 \text{ ms}^{-1}$$

$$4 = 12 + -0.2t$$

$$v = 4 \text{ ms}^{-1}$$

$$0.2t = 12 - 4$$

$$a = -0.2 \text{ ms}^{-2}$$

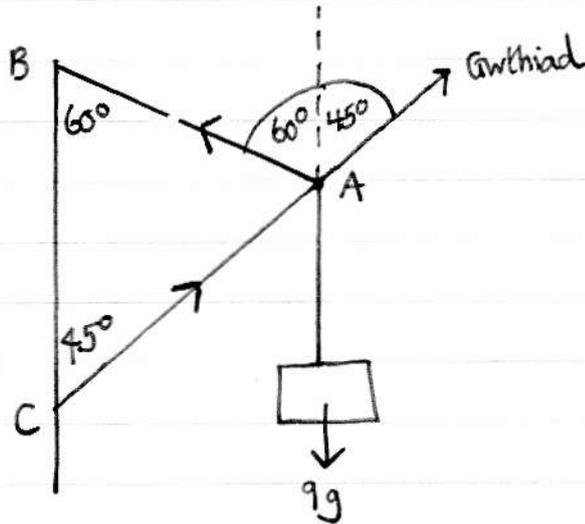
$$t = 8 \div 0.2$$

$$t = ?$$

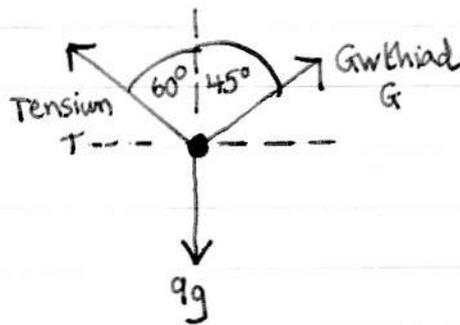
$$\underline{t = 40 \text{ s}}$$

M1 Haf 2014

⑦



Grymoedd yn A:



Grymoedd i'r chwith = Grymoedd i'r dde

$$T \sin 60^\circ = G \sin 45^\circ$$

$$\frac{\sqrt{3}}{2} T = \frac{\sqrt{2}}{2} G$$

$$\sqrt{3} T = \sqrt{2} G \quad \text{--- (1)}$$

Grymoedd i fyny = Grymoedd i lawr

$$T \cos 60^\circ + G \cos 45^\circ = 9g$$

$$\frac{T}{2} + \frac{\sqrt{2}}{2} G = 9g$$

$$T + \sqrt{2} G = 18g \quad \text{--- (2)}$$

Yn amnewid am  $\sqrt{2} G$  o (1) i (2)

$$T + \sqrt{3} T = 18g$$

$$T(1 + \sqrt{3}) = 18g$$

$$T = \frac{18g}{1 + \sqrt{3}}$$

$$\rightarrow \underline{T = 64.57 \text{ N}}$$

i 2 le degol

Yn amnewid yn ôl i (1):

$$\frac{\sqrt{3}}{\sqrt{2}} T = G$$

$$\frac{\sqrt{3}}{\sqrt{2}}$$

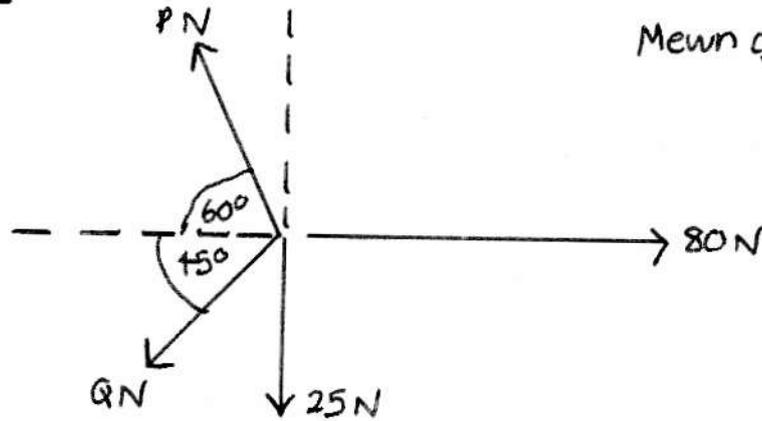
$$\frac{\sqrt{3}}{\sqrt{2}} \times 64.566... = G$$

$$\underline{G = 79.08 \text{ N}}$$

i 2 le degol

M1 Haf 2015

7)



Mewn cydbwysedd

Grymoedd llorweddol:

Grymoedd i'r chwith = Grymoedd i'r dde

$$P \cos 60^\circ + Q \cos 45^\circ = 80$$

$$\frac{P}{2} + \frac{\sqrt{2}}{2} Q = 80$$

$$P + \sqrt{2} Q = 160$$

$$P = 160 - \sqrt{2} Q$$

①

Grymoedd fertigol:

Grymoedd i fyny = Grymoedd i lawr

$$P \sin 60^\circ = Q \sin 45^\circ + 25$$

$$\frac{\sqrt{3}}{2} P = \frac{\sqrt{2}}{2} Q + 25$$

$$\sqrt{3} P = \sqrt{2} Q + 50$$

Yn amnewid o ① am P:

$$\sqrt{3}(160 - \sqrt{2} Q) = \sqrt{2} Q + 50$$

$$160\sqrt{3} - \sqrt{6} Q = \sqrt{2} Q + 50$$

$$160\sqrt{3} - 50 = \sqrt{2} Q + \sqrt{6} Q$$

$$160\sqrt{3} - 50 = Q(\sqrt{2} + \sqrt{6})$$

$$\frac{160\sqrt{3} - 50}{\sqrt{2} + \sqrt{6}} = Q$$

$$Q = 58.78508552$$

$$Q = 58.8 \text{ N i un lle degol}$$

$$Q = 58.8 \text{ N i un lle degol}$$

Yn amnewid yn ① i ①:

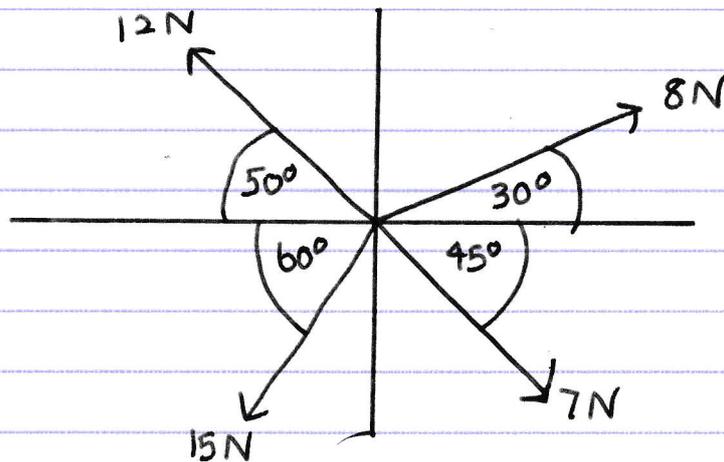
$$P = 160 - \sqrt{2} \left( \frac{160\sqrt{3} - 50}{\sqrt{2} + \sqrt{6}} \right)$$

$$P = 76.86533479$$

$$P = 76.9 \text{ N i un lle degol}$$

M1 Haf 2016

5



Grymoedd llorweddol:

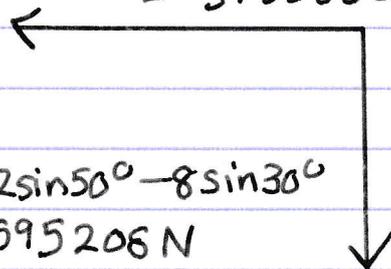
$12 \cos 50^\circ \approx 7.7 \text{ N}$	←
$8 \cos 30^\circ \approx 6.9 \text{ N}$	→
$15 \cos 60^\circ = 7.5 \text{ N}$	←
$7 \cos 45^\circ \approx 4.9 \text{ N}$	→

Grymoedd fertigol:

$12 \sin 50^\circ \approx 9.2 \text{ N}$	↑
$8 \sin 30^\circ = 4$	↑
$15 \sin 60^\circ \approx 12.99 \text{ N}$	↓
$7 \sin 45^\circ \approx 4.9 \text{ N}$	↓

Grym cydeffwrth:

$$12 \cos 50^\circ + 15 \cos 60^\circ - 8 \cos 30^\circ - 7 \cos 45^\circ = 3.335500618 \text{ N}$$



$$15 \sin 60^\circ + 7 \sin 45^\circ - 12 \sin 50^\circ - 8 \sin 30^\circ = 4.747595208 \text{ N}$$

Maint y grym cydeffwrth:  $\sqrt{3.335500618^2 + 4.747595208^2}$   
 $= 5.802174129 \text{ N}$   
 $= 5.8 \text{ N}$  i un lle degol

Beth yw cyflymiad P?

Yn defnyddio  $F = ma$

$$5.802174129 = 4a$$

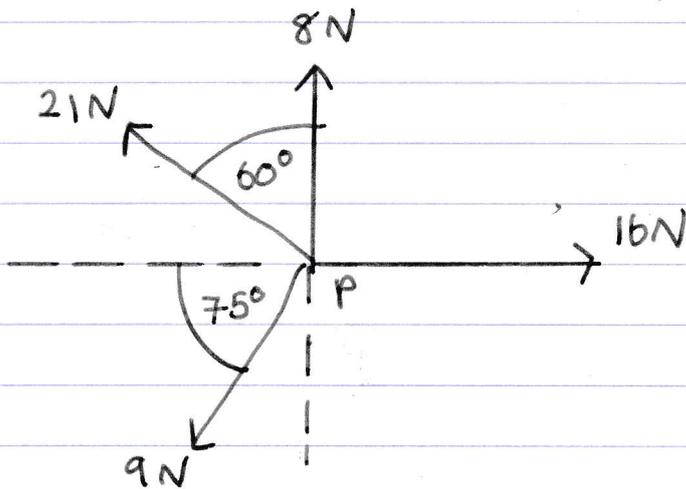
$$a = \frac{5.802174129}{4}$$

$$a = 1.450543532$$

$$a = \underline{1.45 \text{ms}^{-2}} \text{ ; 2 le degol}$$

## M1 Haf 2018

2)



Grymoedd i fyny:  $8 + 21 \cos 60^\circ = 18.5 \text{ N}$

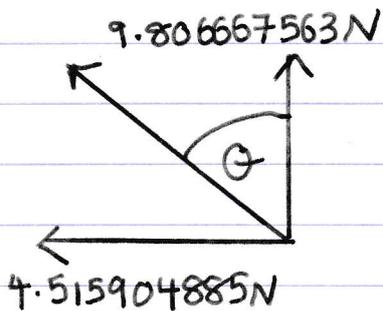
Grymoedd i lawr:  $9 \sin 75^\circ = 8.693332437 \text{ N}$

Grym cyd-effaith fertigol:  $18.5 - 8.693332437$   
 $= 9.806667563 \text{ N}$

Grymoedd i'r dde:  $16 \text{ N}$

Grymoedd i'r chwith:  $21 \sin 60^\circ + 9 \cos 75^\circ = 20.51590489 \text{ N}$

Grym cyd-effaith llorweddol:  $20.51590489 - 16$   
 $= 4.515904885 \text{ N}$



Grym cyd-effaith:

$$\sqrt{9.806667563^2 + 4.515904885^2}$$

$$= 10.79648673$$

$$= \underline{10.8 \text{ N}} \text{ i un lle degol.}$$

Ongl e fôr grym 8 N:  $\tan \theta = \frac{4.515904885}{9.806667563}$

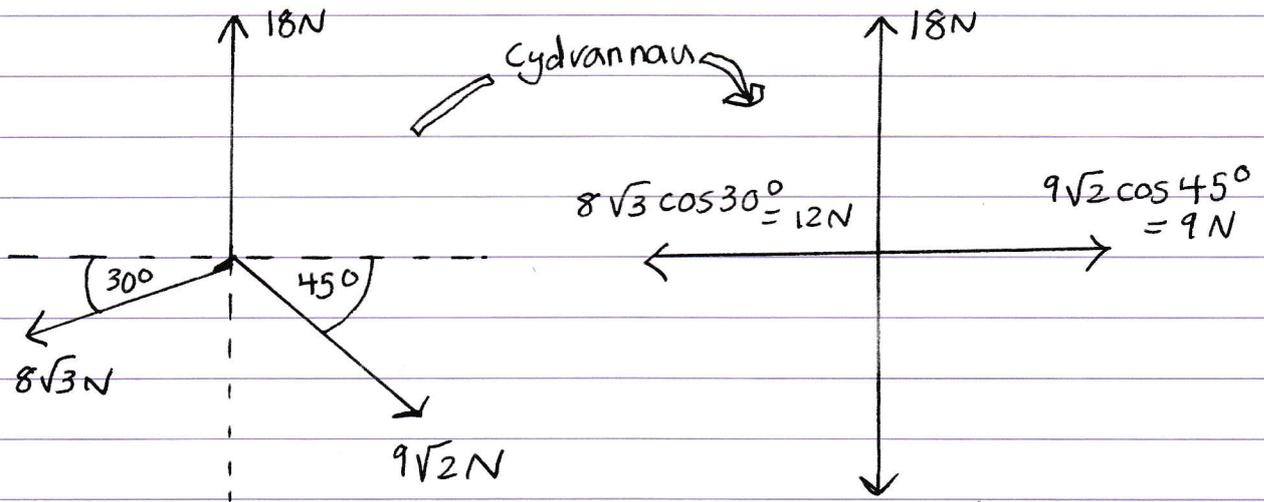
$$\theta = \tan^{-1} \left( \frac{4.515904885}{9.806667563} \right)$$

$$\theta = 24.72575455$$

$$\theta = \underline{24.7^\circ} \text{ i un lle degol}$$

MI Haf 2019

5)



Cydrannau

$$8\sqrt{3} \cos 30^\circ = 12\text{N}$$

$$9\sqrt{2} \cos 45^\circ = 9\text{N}$$

$$9\sqrt{2} \sin 45^\circ + 8\sqrt{3} \sin 30^\circ = (9 + 4\sqrt{3})\text{N}$$

grym cyd-ffaith

$$12 - 9 = 3\text{N}$$

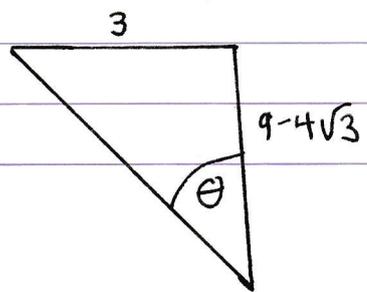
$$18 - (9 + 4\sqrt{3}) = (9 - 4\sqrt{3})\text{N}$$

Maint y grym cyd-ffaith:  $\sqrt{3^2 + (9 - 4\sqrt{3})^2} = 3.65\text{N}$  ; 2 le degol

Ongl ir grym 18N :

$$\tan \theta = \frac{3}{9 - 4\sqrt{3}}$$

$$\theta = \tan^{-1} \left( \frac{3}{9 - 4\sqrt{3}} \right)$$



$$\theta = 55.37^\circ ; 2 \text{ le degol}$$

(ongl ir chwith o'r grym 18N)