Physics

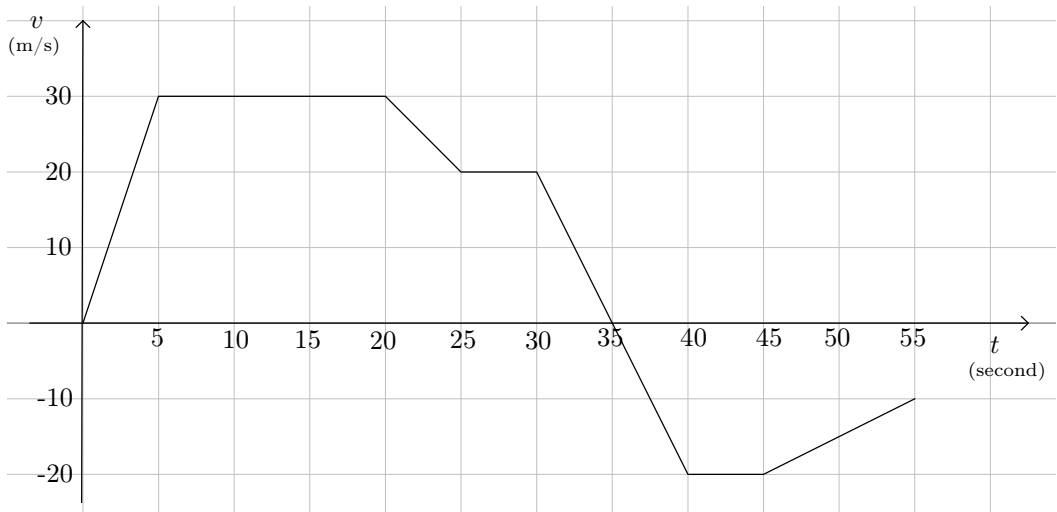Test 1

Total: / 35 marks

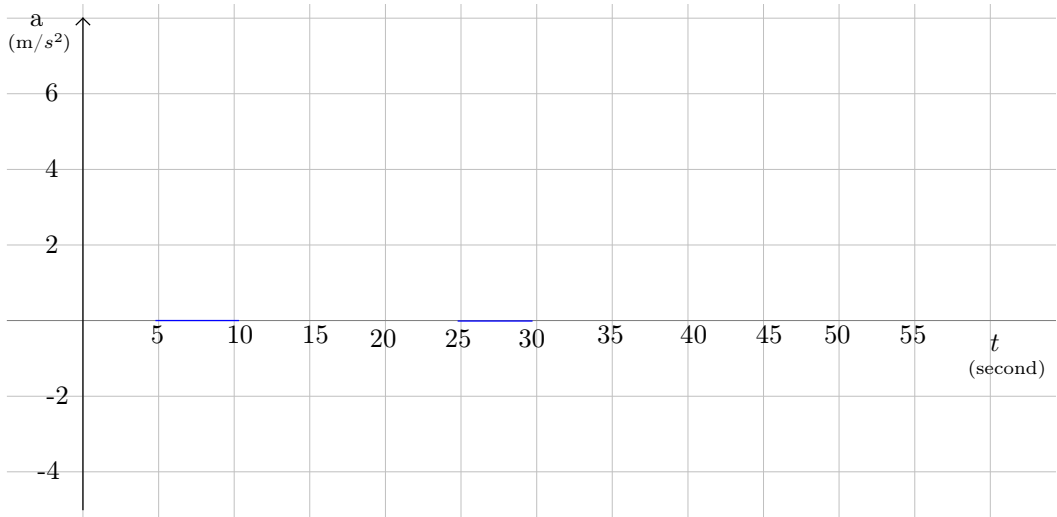**Question 1**   *[20 marks]*

The following graphics shows the **_velocity_** of a bicycle walking on a road for t between 0 and 55s

1) What is the *velocity* of the bike at $t = 27 \sec$?

2) When, for the second time the velocity of the bike reaches 90 km/h ?

3) What is the *displacement* of the bicycle for $0 \leqslant t \leqslant 25\,s$?

5) Calculate the *average velocity* of the bike for $0 \leqslant 1 \leqslant 45\,s$.

6) Complete the table on the right by finding all the *accelerations* (with correct unit)

7) Based on your precedent answers, complete the following graphics

time	acceleration
$0 \leqslant t \leqslant 5s$	
$5 \leqslant t \leqslant 20$ s	
$20 \leqslant t \leqslant 25s$	
$25 \leqslant t \leqslant 30s$	
$30 \leqslant t \leqslant 40s$	
$40 \leqslant t \leqslant 45s$	
$45 \leqslant t \leqslant 55s$	

Question 2   *[10 marks]*

Complete the following table

#	quantity	symbol	s: *scalar* or v:*vector*	unit
1		t		N
2	acceleration			
3				Watt
4			V	m/s
5			S	m/s
6	Pressure			
7				K
8		$\Delta\vec{s}$		

Question 3   *[5 marks]*

Two forces $\vec{F_1}$ and $\vec{F_2}$ are exerted on a circular body, as shown on the picture below.
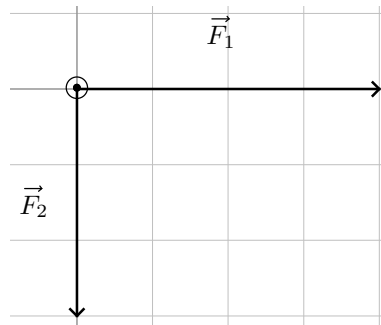
1) Represent the net force on the same picture.

2) Assuming that the *amplitude* of $\vec{F_1}$ is 4N and the *amplitude* of $\vec{F_2}$ is 3N, what is the *amplitude* of the *net force* ?