✳ PHASE RELATIONSHIPS
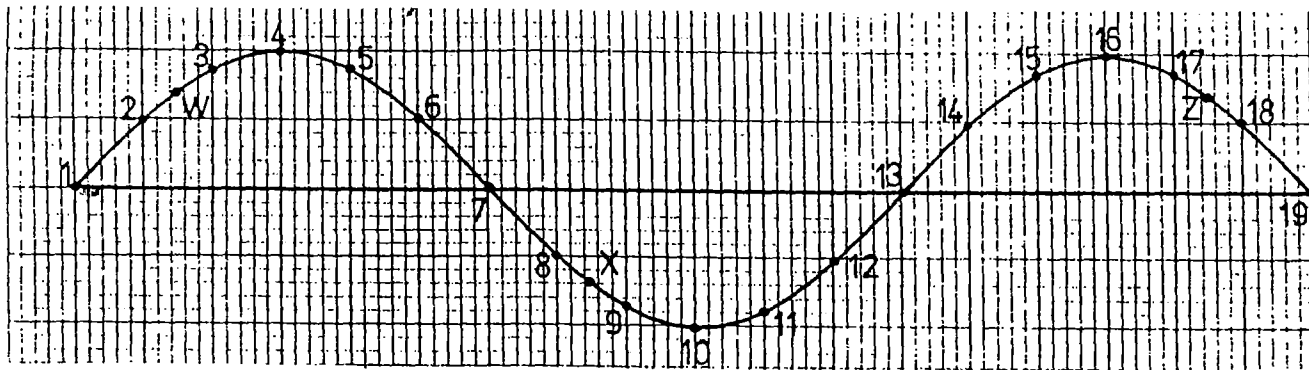
WAVES - 3

This test is designed to measure your ability to determine the phase difference between particles in radian and period measure. For each question write the correct answer in the space provided. The questions below refer to this diagram which shows several particles (1-19) on a wave motion.

Set 1   For each question, determine the phase difference (in radian and period measure) between the particles indicated.

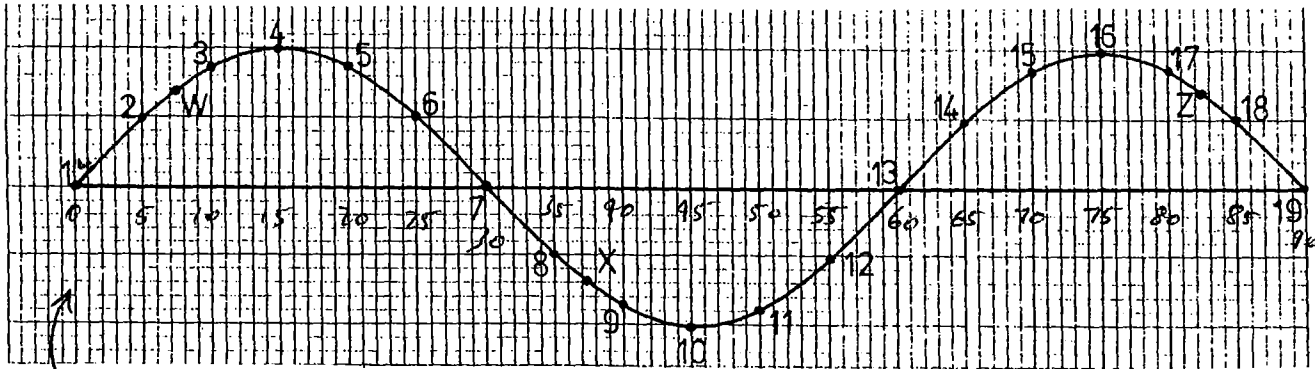| Q	Particles	Radian Measure	Period Measure
1	1 and 4		$\frac{T}{4}$
2	7 and 13		
3	2 and 6	$\frac{2\pi}{3}$	
4	3 and 11		
5	9 and 16		
6	1 and 13		
7	W and X		
8	X and Z		

Set 2   For each question identify a particle which has a difference in phase from particle 1 of the amount stated.

Q	Difference in Phase From Particle 1	Particle
9	$\frac{\pi}{2}$	
10	π	
11	$\frac{4\pi}{3}$	
12	2π	
13	$\frac{T}{4}$	
14	$\frac{7T}{12}$	
15	$\frac{5T}{6}$	
16	0	

R. Kuriany

This test is designed to measure your ability to determine the phase difference between particles in radian and period measure. For each question write the correct answer in the space provided. The questions below refer to this diagram which shows several particles (1-19) on a wave motion.

Each line $= \frac{1}{30} \cdot \pi$

<u>Set 1</u> For each question, determine the phase difference (in radian and period measure) between the particles indicated.

1 period = 12 cm

Q	Particles	Radian Measure	Period Measure
1	1 and 4	$\frac{\pi}{2}$	$\frac{T}{4}$
2	7 and 13	π	$\frac{T}{2}$
3	2 and 6	$\frac{2\pi}{3}$	$\frac{T}{3}$
4	3 and 11	$\frac{4\pi}{3}$	$\frac{2T}{3}$
5	9 and 16	$\frac{7\pi}{6}$	$\frac{7T}{12}$
6	1 and 13	2π (0)	T or (0)
7	W and X	π	$T/2$
8	X and Z	$3\pi/2$	$3T/4$

$\frac{4}{12}$ of full period
$\frac{8}{12}$ of full period
$\frac{7}{12}$ of full period
etc.

<u>Set 2</u> For each question identify a particle which has a difference in phase from particle 1 of the amount stated.

Q	Difference in Phase From Particle 1	Particle
9	$\frac{\pi}{2}$	4
10	π	7
11	$\frac{4\pi}{3}$	9
12	2π	13
13	$\frac{T}{4}$	4
14	$\frac{7T}{12}$	8
15	$\frac{5T}{6}$	11
16	0	13