

REVIEW - Sketching Trigonometric Functions

- sinusoidal functions
 - properties: domain/range, amplitude, period, phase shift, vertical translation, eq'n of sinusoidal axis, mapping notation.
 - sketching equation in standard form.
- finding the function (both a sine/cosine) given a graph
- solving trigonometric equations where period is not 360
- applications of sinusoidal functions.
 - sketch
 - develop a function
 - use function to answer question
- sketches of all SIX trigonometric ratios

Textbook Review....

Pg. 282 - 285

#4, 6, 7, 8, 10, 11, 20, 21, 22, 23, 24

Practice Test: Page 286 - 287

#1 - 7

#11, 12, 14, 15, 16

Complete the chart shown below and sketch one full cycle of this function

DOMAIN	$0 \leq \theta < 2\pi$
RANGE	$0 \leq y \leq 4$
AMPLITUDE	2
PERIOD	$\frac{2\pi}{3}$
PHASE SHIFT	$\frac{\pi}{24}$
VERTICAL TRANSLATION	up 2
EQUATION OF SINUSOIDAL AXIS	$y = 2$

$$f(\theta) = -\frac{1}{2}(y+2) = \sin\left(3\theta + \frac{\pi}{8}\right) - 2$$

$$y + 2 = -2 \sin\left(3\left(\theta + \frac{\pi}{24}\right)\right) + 4$$

$$y = -2 \sin\left[3\left(\theta + \frac{\pi}{24}\right)\right] + 2$$

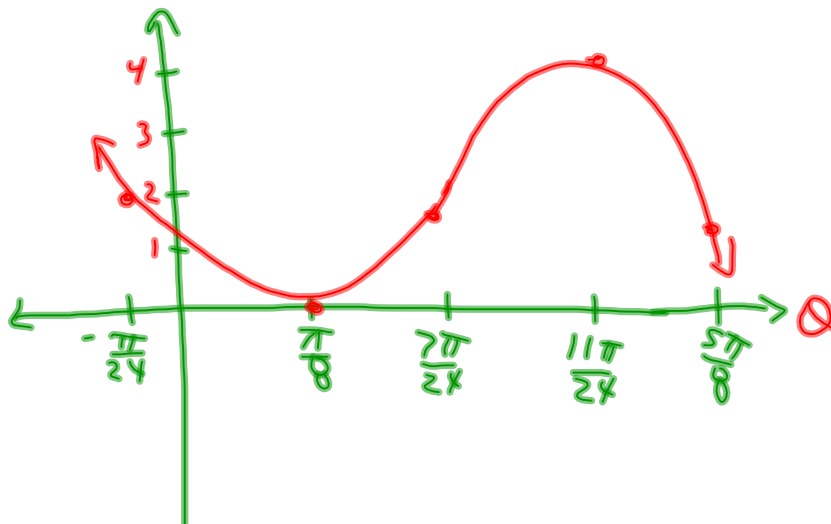
↑ Amplitude = 2
 ↑ Period = $\frac{2\pi}{3}$
 ↑ Phase shift = $\frac{\pi}{24}$
 ↑ V. shift = 2

$$(x, y) \rightarrow \left(\frac{1}{3}\theta - \frac{\pi}{24}, -2y + 2\right)$$



θ	y
0	0
$\frac{\pi}{2}$	1
π	0
$\frac{3\pi}{2}$	-1
2π	0

θ	y
$-\frac{\pi}{24}$	2
$\frac{3\pi}{24}$	0
$\frac{7\pi}{24}$	2
$\frac{11\pi}{24}$	4
$\frac{15\pi}{24}$	2



PRACTICE TIME...

Review - Practice Test for Sinusoidal Functions.doc

Practice Test Solutions

Part A: Multiple Choice

- | | |
|-------|---------------------|
| 1. A | 11. A (second hand) |
| 2. D | 12. C |
| 3. A | 13. A |
| 4. C | 14. C |
| 5. B | 15. D |
| 6. D | 16. D |
| 7. A | 17. B |
| 8. D | 18. D |
| 9. B | 19. A |
| 10. A | 20. A |

Part B: Open Response

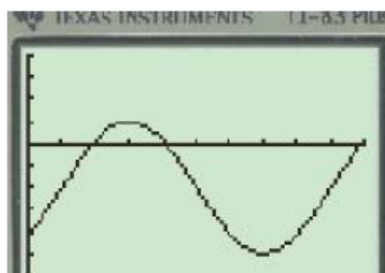
1. $-\frac{5}{4}$

2. (i) $y = 3 \sin \frac{3}{2}(x - 160^\circ) - 6$

$$y = 3 \cos \frac{3}{2}(x + 20^\circ) - 6$$

(ii) $(x, y) \rightarrow \left(\frac{2}{3}x + 160^\circ, 3y - 6 \right)$

3.



X	Y1
15	2
45	1
75	0
105	-1
135	-2
165	-1
195	2

X=195

4. 10.28 m

Attachments

Review - Practice Test for Sinusoidal Functions.doc