ANSWER KEY

INVERSE TRIG WORKSHEET

NAME: KEY

PERIOD:

1/23/08

GIVE ALL SOLUTIONS t TO THESE QUESTIONS, IF ANY.

1. WHEN IS $y = 9$, GIVEN

$$y = 7\cos(2t) + 3$$

FOR $0 \le t \le \pi$

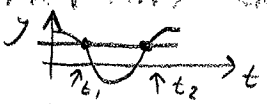
a, USE ALGEBRA TO FIND EQUATIONS FOR t

$\cos 2t = (9-3)/7$ Relationship: $t_1 = \frac{1}{2}\cos^{-1}(6/7)$, $t_2 = \pi - t_1$

b, FIND t VALUES USING CALCULATOR

$t_1 \approx 0.271$. $t_2 = \pi - 0.271 \approx 2.871$

c, USE GRAPHING CALCULATOR TO FIND t VALUES

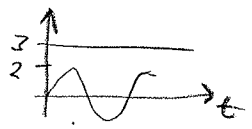


INTERSECT AT t_1 AND t_2

2. SOLVE ALGEBRAICALLY:

$y = 3$ FOR $y = 2\sin t$. CHECK WITH GRAPH.

$-1 \le \sin t \le 1$ NONE

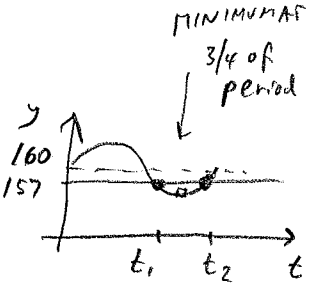


3. $y = 157$ FOR

$y = 160 + 5\sin(\pi t)$

IN $0 \le t \le$ (ONE PERIOD)

a, FIND PERIOD. 2

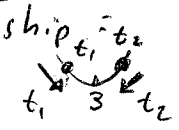


b, USE A GRAPH TO FIND t VALUES.

$t_1 = 1.205$

$t_2 = 1.795$

c, Relationship: $\frac{t_1 + t_2}{2} = \frac{3}{4}(2)$ (average ↓, period ↓) $t_2 = 3 - t_1$



N 75.