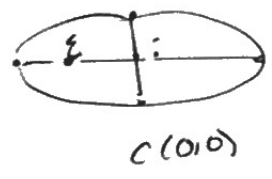


Indicators 8T3

1.01 Ex 1

1. Vert. stretch by 2
2. Horiz compression by 1/2
3. Reflection over x axis
4. Reflection over y axis
5. Translation left 2
6. Translation down 4
7. Reflection of all pts w/ -y value over x axis
8. Reflection of all pts w/ -x value over y axis

1.02 Ex 2



major axis = 8910  
8910/2 = 4455

minor axis = 8800  
8800/2 = 4400

a)  $\frac{x^2}{4455^2} + \frac{y^2}{4400^2} = 1$

$\sqrt{4455^2 - 4400^2} = 697.9$   
mi

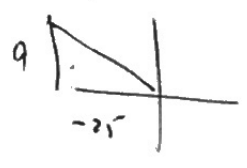
b) 943.4 mi from

1.03 Ex 2

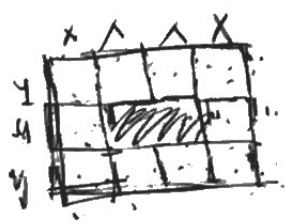
$\vec{r} = (0, 9)$        $\vec{r} = (-25, 0)$

$\sqrt{25^2 + 9^2}$   
= 26.6 mph

$\vec{r} + \vec{r} = (-25, 9)$   
 $\tan^{-1}(9/25)$   
19.8°  
N 70.2° W



2.01 Ex 3



$A = xy = 180$        $y = \frac{180}{x}$   
 $P(x) = 16x + 14\left(\frac{180}{x}\right)$

min  $x = 12.55$  ft      total length of walls =  
 $y = \frac{180}{12.55} = 14.34$  ft       $16x + 14y = P$

2.02 Ex 4

$$\sin 2x - \tan x = 0$$

$$2 \sin x \cos x - \frac{\sin x}{\cos x} = 0$$

$$\sin x \left( 2 \cos x - \frac{1}{\cos x} \right) = 0$$

$$\sin x = 0 \quad \text{or} \quad 2 \cos x = \frac{1}{\cos x}$$

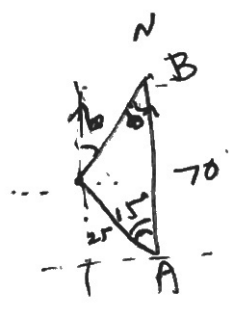
0,  $\pi$

$$\cos^2 x = \frac{1}{2}$$

$$\cos x = \pm \frac{\sqrt{2}}{2}$$

$\pi/4, 3\pi/4, 5\pi/4, 7\pi/4$

2.02 Ex 10



$$a^2 = 25^2 + 70^2 - 2(25)(70)\cos 15$$

$$a = 46.3 \text{ mi}$$

$$\frac{\sin B}{25} = \frac{\sin 15}{46.3}$$

$B = 8^\circ$

2.04 Ex 3

$$f(g(x)) = -4(\sqrt{x-8}) + 2$$

$$-4\sqrt{x-8} + 2 = -6$$

$$-4\sqrt{x-8} = -8$$

$$\sqrt{x-8} = 2$$

$$x-8 = 4$$

$x = 12$

2.04 Ex 5

$$h(x) = \sqrt[3]{x} - 3$$

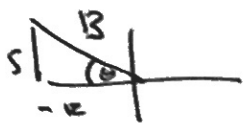
$$x = \sqrt[3]{y} - 3$$

$$x + 3 = \sqrt[3]{y}$$

$$(x+3)^3 = y$$

$$h^{-1}(x) = (x+3)^3$$

2.05 Ex 3



$$\theta = 22.6$$

$$\tan^{-1}(5/12)$$

$$(13, 157.4^\circ)$$

$$180 - 22.6 =$$

2.65 Ex 6

$$1) \quad 4x^2 - 8x + 8y^2 + 48y = -44$$

$$4(x^2 - 2x + 1) + 8(y^2 + 6y + 9) = -44 + 4 + 72$$

$$4(x-1)^2 + 8(y+3)^2 = 32$$

$$\frac{(x-1)^2}{8} + \frac{(y+3)^2}{4} = 1 \quad \text{Elliptic}$$

$$2) \quad -12x = -y^2 - 18y - 153$$

$$12x = y^2 + 18y + 153 - 81$$

$$12x = (y+9)^2 + 72$$

$$x = \frac{1}{12}(y+9)^2 + 6 \quad \text{parabola}$$

omit c part of each

2.07

Ex 2

a)  $a_n = .65(a_{n-1})$  Increments of 4 hrs

	8am	12pm	4pm	8pm	12pm
	0	1	2	3	4
mg	800	526	338	219.7	142.8

Before midnight dose

b)  $a_n = .65(a_{n-1}) + 800$

	8am	12pm	4pm	8pm	midnight
	0	1	2	3	4
mg	800	1320	1658	1977.7	2020.50

after midnight dose  
 $2020.50 - 800 =$   
 $= 1220.505 \text{ mg before midnight dose}$

2.07

Ex 6

$$\sum_{n=1}^8 (3n-2)$$

a)  $10 + 13 + 16 + 19 + 22$

b)  $S = 80$

2.07

Ex 10

$a_1 = 7$      $a_n = 5 \cdot a_{n-1}$      $n > 1$

1	2	3	4	5	6
7	35	175	875	4375	21875

$$a_n = 7(5)^{n-1} = \frac{7}{5}(5)^n$$

2.08

Ex 3 B only

$$\lim_{x \rightarrow \infty} 200(1 + .05)^x = \$ 329.74$$

on calc

2.08

Ex 6

$$f(x) = \sin(\pi/x)$$

$$\lim_{x \rightarrow 0} f(x) = 0$$

on calc