

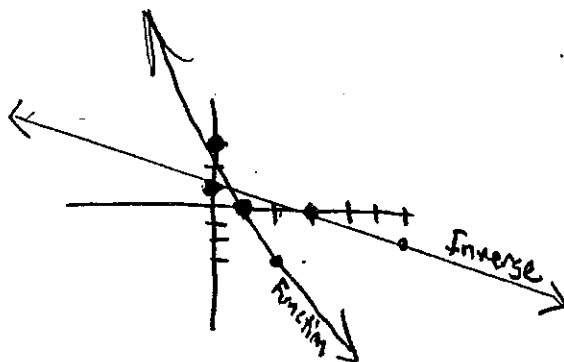
Alg. 2 Exam Review

1) $64^{2/3} = \boxed{16}$

2) $6^{-24/100} = 6^{-6/25} = 6^{-2/5} = \boxed{\frac{1}{6^{2/5}}}$

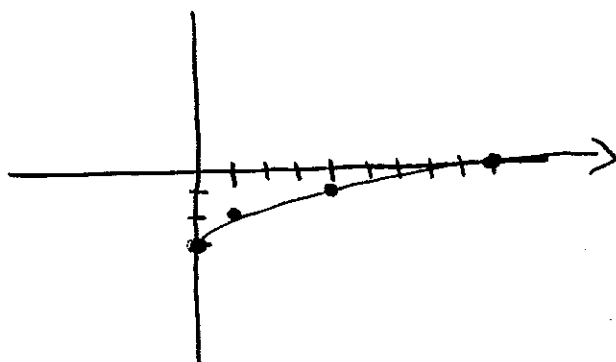
3) Function
 $y = -3x + 3$

Inverse
 $x = -3y + 3$
 $x - 3 = -3y$
 $-\frac{1}{3}x + 1 = y$



4) $y = \sqrt{x} - 3$

x	y
0	-3
1	-2
4	-1
9	0



5) $g = 190\sqrt{p}$
 $475 = 190\sqrt{p}$
 $2.5 = \sqrt{p}$
 $2.5^2 = p$

$\boxed{6.3 \text{ lbs/in}^2}$

6) $2e^x - 1 = 15$

$2e^x = 16$

$e^x = 8$

$\ln e^x = \ln 8$

$\boxed{x = 2.08}$

8) $\text{mean} = \frac{(34 + 31 + 11 + 39 + 37 + 26 + 18 + 16)}{8} = \boxed{26.5}$

9) $y = 2000 \left(1 + \frac{12}{12}\right)^{12(10)} = \boxed{\$6600.77}$

10) $y = 70,000(1 - .10)^{12} = \boxed{\$19,770.07}$

7) $\sqrt[3]{y-3} = 4$

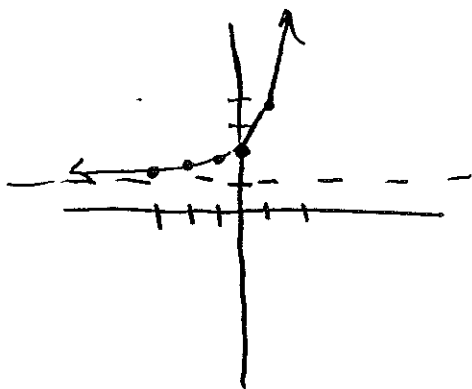
$y-3 = 4^3$

$y-3 = 64$

$\boxed{y = 67}$

$$1) y = 1 + e^x$$

X	Y
-3	1.05
-2	1.14
-1	1.37
0	2
1	3.72
2	8.39
3	21.1



$$1) y = 7000e^{.09(3)}$$

$$y = 9169.75$$

$$3) \log_6(6^{-2}) = -2$$

$$4) \frac{\log 25}{\log 7} = 1.654$$

$$5) \log_8(8(\frac{x}{y})^{1/2})$$

$$\log_8 8 + \frac{1}{2} \log_8 x - \frac{1}{2} \log_8 y$$

$$1 + \frac{1}{2} \log_8 x - \frac{1}{2} \log_8 y$$

$$1) \log_{10} \frac{16}{x^{1/2}} = \log_{10} 4$$

$$\frac{16}{x^{1/2}} = 4$$

$$16 = 4x^{1/2}$$

$$4 = x^{1/2}$$

$$16 = x$$

$$17) 8^{-.2x} - 2 = 6$$

$$8^{-.2x} = 8$$

$$\log_8 8^{-.2x} = \log_8 8$$

$$-.2x = 1$$

$$x = -5$$

$$18) C = \frac{K}{P} \quad C = \frac{1085}{81}$$

$$31 = \frac{K}{35}$$

$$K = 1085$$

$$C = 13.40$$

$$19) y = \frac{4-2x}{x-3}$$

Asymp

$$x = 3 \quad y = -2$$

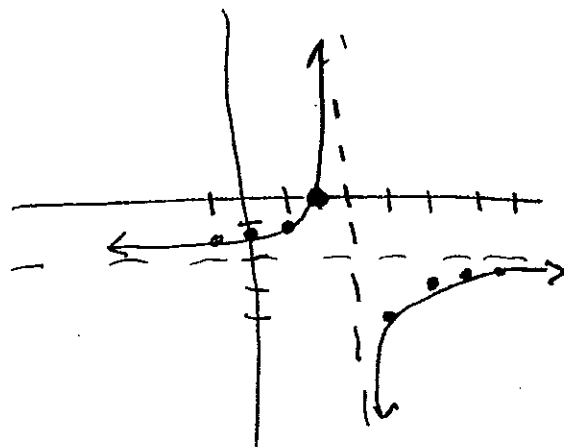
X	Y
4	-4

X	Y
2	0

X	Y
1	-1

X	Y
6	-1.3

X	Y
7	-2.5



$$20) \text{vert (Denominator = 0)}$$

$$x = \pm 3$$

horizontal (m=n)

$$y = \frac{1}{1} = 1$$

$$21) \frac{(x+4)(x+5)}{5x^2(x+2)} \cdot \frac{(x+5)(x+4)}{5x(x+5)} = \frac{(x+4)^2}{25x^3}$$

$$2) \frac{3x-5}{(x+6)(x-6)} - \frac{2}{x-6}$$

$$\frac{3x-5-2(x+6)}{(x+6)(x-6)}$$

$$\frac{3x-5-2x-12}{(x+6)(x-6)}$$

$$\frac{x-17}{(x+6)(x-6)}$$

$$3) \frac{x}{15} - \frac{30x}{2x} = \frac{1}{3} \cdot 30x$$

$$2x^2 - 150 = 10x$$

$$2x^2 - 10x - 150 = 0$$

$$2(x^2 - 5x - 75) = 0$$

$$\frac{5 \pm \sqrt{(-5)^2 - 4(1)(-75)}}{2(1)}$$

$$\frac{5 \pm \sqrt{325}}{2}$$

$$\frac{5 + \sqrt{325}}{2} \approx 11.5$$

$$\frac{5 - \sqrt{325}}{2} \approx -6.5$$

$$1) d = \sqrt{(3-(-5))^2 + (0-6)^2}$$

$$= \sqrt{(8)^2 + (-6)^2}$$

$$= \sqrt{100}$$

$$= 10$$

$$25) y^2 = -5x$$

opens left

$$4p = -5$$

$$p = -\frac{5}{4}$$

$$\text{focus } (-\frac{5}{4}, 0)$$

$$\text{directrix: } x = \frac{5}{4}$$

$$26) r = \sqrt{(6-0)^2 + (8-0)^2}$$

$$= \sqrt{100}$$

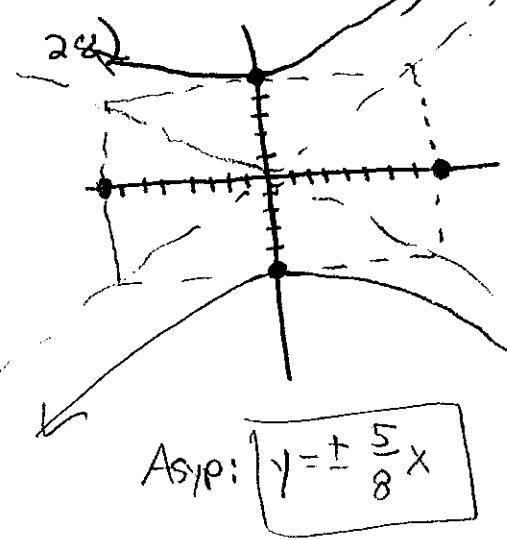
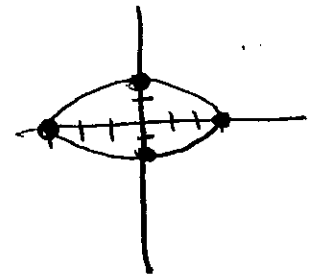
$$= 10$$

$$x^2 + y^2 = 10^2$$

$$x^2 + y^2 = 100$$

$$27) \frac{4x^2}{36} + \frac{9y^2}{36} = \frac{36}{36}$$

$$\frac{x^2}{9} + \frac{y^2}{4} = 1$$



$$\text{Asyp: } y = \pm \frac{5}{8}x$$

29) Don't Do

$$30) A = 5$$

$$B = -7$$

$$A \cdot B < 0$$

Hyperbola

$$31) y^2 + 4x = 0$$

$$x + y = 0 \Rightarrow x = -y$$

$$y^2 + 4(-y) = 0$$

$$y(y-4) = 0$$

$$y = 0 \quad (0, 0)$$

$$y = 4 \quad (-4, 4)$$

$$32) a) \frac{10}{1} \cdot \frac{10}{1} \cdot \frac{10}{1} \cdot \frac{26}{1} \cdot \frac{26}{1} \cdot \frac{26}{1} \cdot \frac{26}{1} = 1.1881376 \times 10^{10}$$

$$b) \frac{10}{5} \cdot \frac{9}{8} \cdot \frac{8}{26} \cdot \frac{26}{25} \cdot \frac{24}{23} \cdot \frac{22}{21} = 568,3392,000$$

$$33) 6! = 720$$

$$8C_3 = 56$$

$$6P_2 = 30$$

$$34) a) 12C_1 \cdot 11C_1 \cdot 10C_1 = 1320$$

$$b) 13C_1 \cdot 12C_1 \cdot 11C_1 = 1716$$

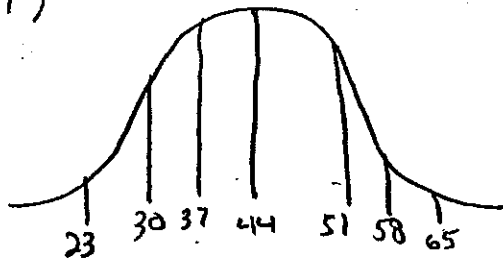
$$35) x^4 + 4(x^3(-2)) + 6(x^2(-2))^2 + 4(x(-2))^3 + (-2)^4$$

$$x^4 - 8x^3 + 24x^2 - 32x + 16$$

$$36) \frac{4}{52} + \frac{13}{52} - \frac{1}{52} = \frac{16}{52} = \frac{4}{13}$$

$\frac{4}{13}$
 308
 30.8%

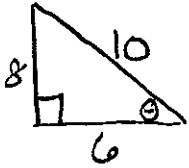
37)



a) $34\% + 34\% + 13.6\% = \boxed{81.6\%}$

b) $.2\%$

38)



$$\sin \theta = \frac{8}{10} = \frac{4}{5}$$

$$\csc \theta = \frac{5}{4}$$

$$\cos \theta = \frac{6}{10} = \frac{3}{5}$$

$$\sec \theta = \frac{5}{3}$$

$$\tan \theta = \frac{8}{6} = \frac{4}{3}$$

$$\cot \theta = \frac{3}{4}$$

39) $\sin 30 = \frac{5}{x}$

$$x \sin 30 = 5$$

$$x = \frac{5}{\sin 30} = \boxed{10}$$

41) $\frac{\sin 109}{46} = \frac{\sin 38}{b}$

$$\boxed{b = 29.95}$$

40) $\cos \theta = \frac{\text{adj}}{\text{hyp}}$

$$10^2 - 6^2 = (\text{adj})^2$$

$$64 = (\text{adj})^2$$

$$8 = \text{adj}$$

$$\cos \theta = \frac{8}{10} = \boxed{\frac{4}{5}}$$

42) $b^2 = 25^2 + 18^2 - 2(25)(18)\cos 40$

$$b^2 = 259.56$$

$$\boxed{b = 16.11}$$