Int 3 MA Sem. 1 RFF #5 Name: _____ Group: _____

1. Three cans of soda and two bags of chips cost $5.35. Two cans of soda and four bags of chips cost $6.90. What is the cost of the chips?

$2(3p + 2c = 5.35)$
$-3(2p + 4c = 6.90)$
$6p + 4c = 10.70$
$-6p - 12c = -20.70$
$-8c = -10$
$c = 1.25$

2. Put in graphing form.
$x^2 + 4x + y^2 - 8y - 12 = 0$

$x^2 + 4x + 4 + y^2 - 8y + 16 = 12 + 4 + 16$

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

3. Write an equation of an exponential function that passes through the points (1, 16) and (3, 10.24).

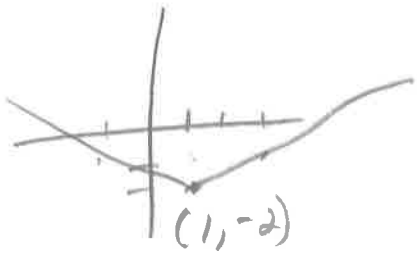
$y = a \cdot b^x$
$16 = a \cdot b^1$
$\frac{16}{b} = a$
$\frac{16}{.8} = a$
$20 = a$
$y = 20(.8)^x$

$10.24 = a \cdot b^3$
$10.24 = \left(\frac{16}{b}\right) \cdot b^3$
$10.24 = 16b^2$
$.64 = b^2$
$.8 = b$

4. Solve $5^x = 20$

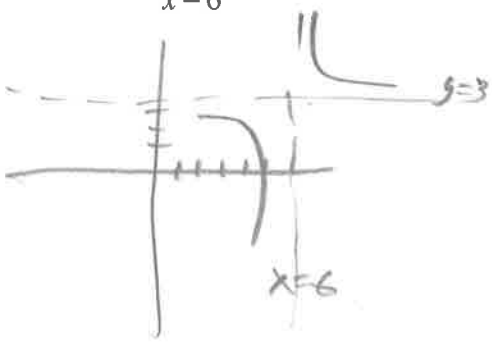
$\log_5 20 = x$
$1.86 = x$

5. Sketch $y = \frac{2}{3}|x-1| - 2$

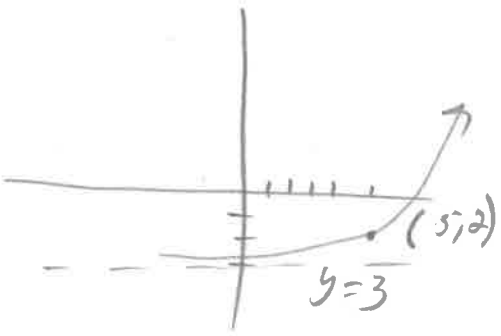



6. Sketch $y = \frac{1}{x-6} + 3$

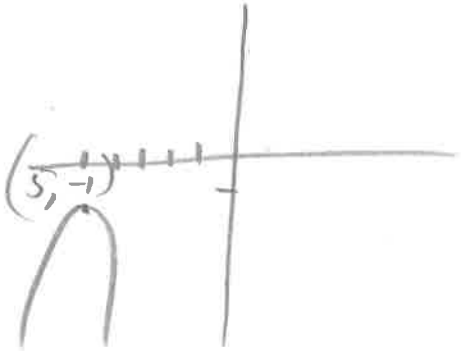
(6, 3)



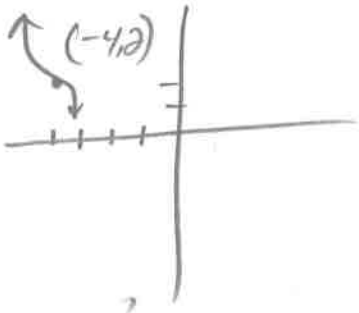

7. Sketch $y = 2^{x-5} - 3$




8. Sketch $y = -2(x+5)^2 - 1$




9. Sketch $y = -(x+4)^3 + 2$




$b = 0.8$

10. Find the domain of
$f(x) = \frac{\sqrt{7-x}}{x-15}$

$7 - x \geq 0$
$7 \geq x$
$x - 15 \neq 0$
$x \neq 15$


$(-\infty, 7]$

11. Sketch $y = \log_2(x+3) - 2$.
Find the domain and x-int.

$0 = \log_2(x+3) - 2$
$2 = \log_2(x+3)$
$2^2 = x + 3$
$4 = x + 3$
$1 = x$

D: $(-3, \infty)$

12. Given 1 4 5 9 7 10. Find the interquartile range.

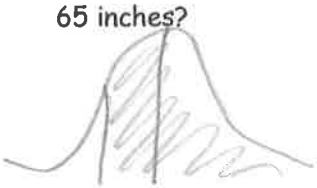
REORDER: 1 4 5 7 9 10

$Q_1 = 4$
$Q_3 = 9$

$IQR = Q_3 - Q_1$
$IQR = 9 - 4$
$IQR = 5$

13. Height is normally distributed. If the average man is 68 inches with a standard deviation of 4 inches, what is the probability you randomly choose a man taller than 65 inches?

$\sigma = 4$




normal cdf $(65, 10^{99}, 68, 4)$

$.7733$

14. Solve

$\log_2(x-5)+\log_2(x+1)=3$

$\log_2(x-5)(x+1)=3$

$2^3 = x^2-4x-5$

$8 = x^2-4x-5$

$0 = x^2-4x-13$

$x = \frac{-(-4)\pm\sqrt{(-4)^2-4(1)(-13)}}{2(1)}$ or $\frac{4\pm2\sqrt{17}}{2}$ or $2\pm\sqrt{17}$

$\frac{4+\sqrt{68}}{2}$ $x = 6.12$

15. Height is normally distributed. If the average man is 68 inches with a standard deviation of 4 inches, what is the height of a man representing the 70th percentile?


inverse norm $(.7, 68, 4)$ $= 70.1$

16. Solve

$\log_7(x+3)+\log_7(x-2)=\log_7(14)$

$\log_7(x+3)(x-2)=\log_7 14$

$x^2+x-6=14$

$x^2+x-20=0$

$(x+5)(x-4)=0$

~~$x=-5$~~ $x=4$

17. Solve $\log_2(2x-3)-\log_2(5)=4$

$\log_2\frac{2x-3}{5}=4$

$2^4=\frac{2x-3}{5}$

$16=\frac{2x-3}{5}$

$80=2x-3$

$83=2x$

$\frac{83}{2}=x$

18. What is f(g(x)) if

$f(x)=5x-2$ and $g(x)=\frac{1}{7-x}$

$f\left(\frac{1}{7-x}\right)=5\left(\frac{1}{7-x}\right)-2$

$\frac{5}{7-x}-\frac{2}{1}\cdot\frac{(7-x)}{(7-x)}$

$\frac{5-14+2x}{7-x}$

$\frac{-9+2x}{7-x}$

19. How many distinct 4 digit ID numbers can be given?

10 10 10 10

10000

20. How many different ways can three person committees be selected from 8 people?

$_8C_3 = 56$

21. How many different ways can ways can first, second and third places in a race of 10 people?

10 9 8

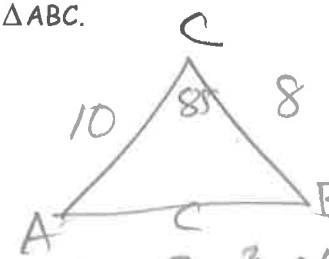
720

22. How many solutions does $\Delta ABC$ have if a = 15 b = 11 and angle A = 35°


1 $\Delta$

Bx 24.87

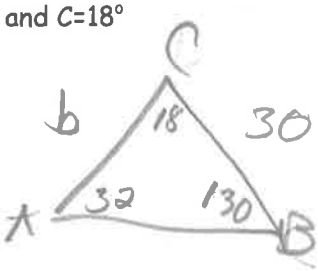
23. Find c if b= 10, a= 8 and C=85° in $\Delta ABC$.




$c^2 = 8^2+10^2-2(8)(10)\cos 85°$

$c = 12.25$

24. Given $\Delta ABC$, find b when a=30, A=32° and C=18°




$\frac{\sin 32}{30}=\frac{\sin 130}{b}$

$b = 43.37$