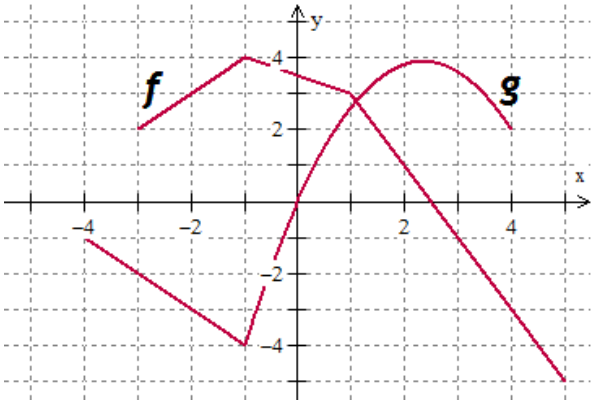
WS2 – review intercepts, linear equations, inequalities, radians, domain/range
Calculus AB SHOW WORK IN YOUR NOTEBOOK.



1. Use the graph at the right to answer each.
   a. $f(1)$
   b. $g(-2)$
   c. $f(g(-2))$
   d. $g(f(-2))$
   e. $f(f(-1))$
   f. $f(g(4))$

Find the x and y intercepts of each.

2. $y=\frac{1}{2}x-4$
3. $2x-3y=6$
4. $y=4x^3+4x^2-15x$
5. $y=2x^2+11x-6$

Name the domain and range of each. Write your answers in interval notation.

6. $f(x)=\frac{1}{x-3}$
7. $y=\sqrt{x+3}$
8. $y=\sqrt{36-x^2}$
9. $g(x)=\frac{\sqrt{x+3}}{x}$

Linear equations

10. Find the equation of the line that passes through the points (2,-3) and (-3,-1) in standard form.
11. Find the equation of the line that passes through the points (-3,-3) and (5,0) in point slope form.
12. Find the equation of the line that passes through the points (2,-5) and (2,-6) in any form.

Graph each split function.

13. $f(x)=\begin{cases} x^3-2;\ x\geq -1 \\ -x-2;\ x<-1 \end{cases}$
14. $g(x)=\begin{cases} 2x+3\ ;\ x\leq -1 \\ 2\ ;\ -1<x<3 \\ (x-3)^2\ ;\ x\geq 3 \end{cases}$

Sketch a high quality graph of each.

15. $y=\frac{1}{x-2}$
16. $y=\frac{4}{(x-2)^2}$
17. $y=\frac{-1}{x+3}$
18. $y=\frac{x-1}{x+4}$
19. $y=\frac{4x+3}{2x-3}$

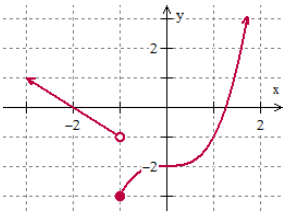
Sketch some more high quality graphs using PARENT functions. (30 seconds each – MAX!)

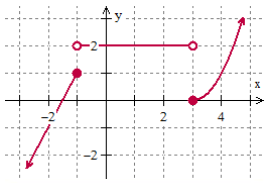
20. $y=-x^2+3$
21. $y=2(x-2)^2-1$
22. $y=|x-4|-1$
23. $y=-\sqrt{x-4}+1$
24. $f(x)=2|x-3|+1$
25. $f(x)=-(x+1)^3-2$

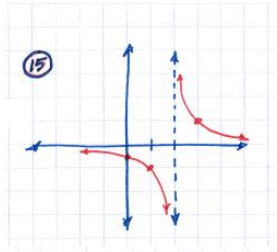
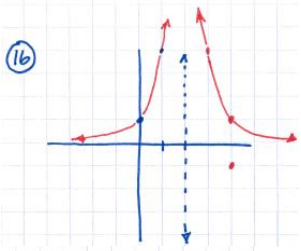
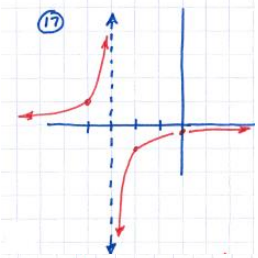
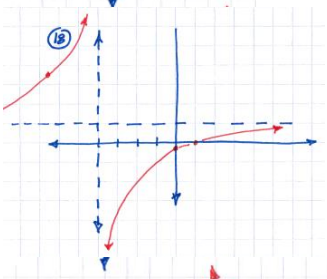
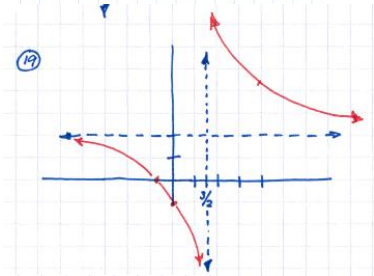
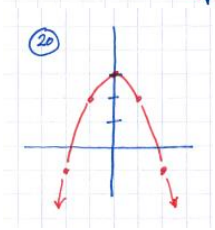
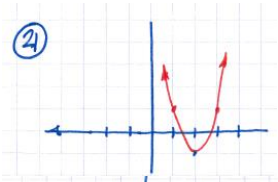
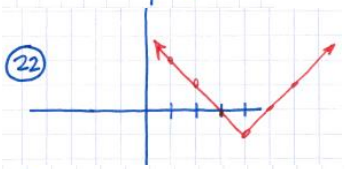
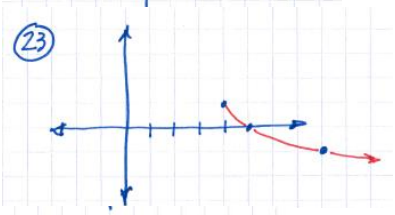
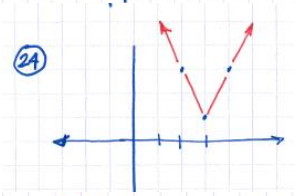
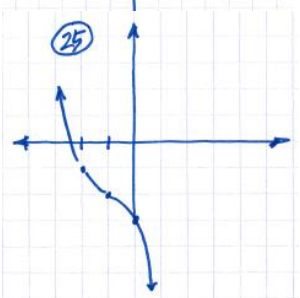
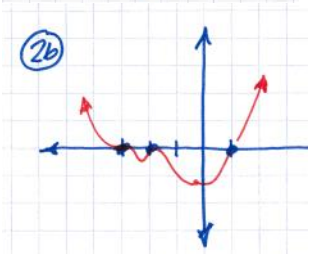
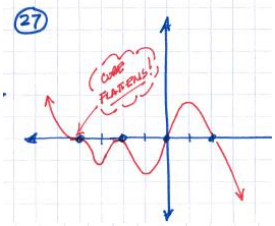
Sketch a graph of each POLYNOMIAL function.

26. $f(x)=(x+2)^2(x-1)(x+3)^3$
27. $f(x)=-x(x-2)(x+4)^3(x+2)^2$
28. $f(x)=(x+3)^2(x-3)^2$

Answers

1. –
   a. 3
   b. -3
   c. 2
   d. 3.5
   e. -3
   f. 1
2. $(0,-4)(8,0)$
3. $(0,-2)(3,0)$
4. $(0,0),\left(-\frac{5}{2},0\right),\left(\frac{3}{2},0\right)$
5. $\left(\frac{1}{2},0\right),(-6,0),(0,-6)$
6. D: all real numbers except 3
   $(-\infty,3)u(3,\infty)$
   R: all real numbers except 0
   $(-\infty,0)u(0,\infty)$
7. D: $[-3,\infty)$
   R: $[0,\infty)$
8. D: $[-6,6]$
   R: $[0,6]$
9. D: $[-3,0)u(0,\infty)$
   R: $(-\infty,\infty)$
10. $2x+5y=-11$
11. $y-0=\frac{3}{8}(x-5)$
12. x = 2
13. 

14. 

15. 
16. 
17. 
18. 
19. 
20. 
21. 
22. 
23. 
24. 
25. 
26. 
27. 

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