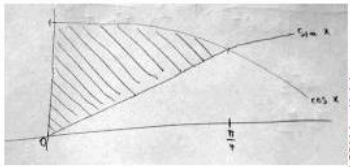
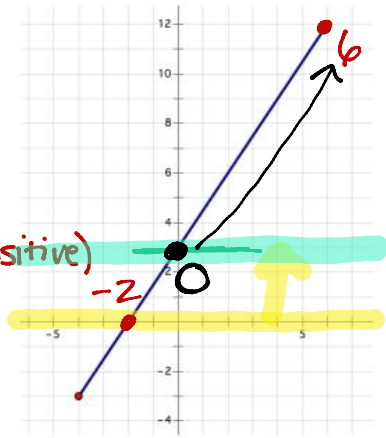
3.6 Interpreting Functions

A Practice Understanding Task



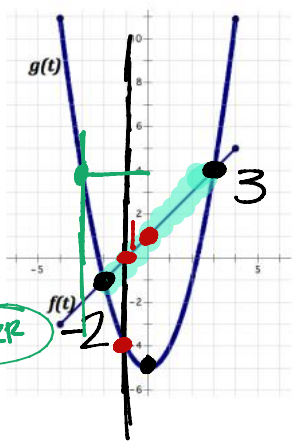
Given the graph of *f(x)*, answer the following questions. Unless otherwise specified, restrict the domain of the function to what you see in the graph below. Approximations are appropriate answers.



1. What is $f(2)$? $x=2$ → $y=6$
2. For what values, if any, does $f(x) = 3$? $y=3$
3. What is the x-intercept? $x=0$
4. What is the domain of $f(x)$? $(-2,0)$
5. On what intervals is $f(x) > 0$? $[-4,6]$ $y>0$ (positive)
6. On what intervals is $f(x)$ increasing? $(-2,6)$
7. On what intervals is $f(x)$ decreasing? $(-4,6)$
8. For what values, if any, is $f(x) > 3$? none $y>3$

$(0,6)$

Consider the linear graph of $f(t)$ and the nonlinear graph of $g(t)$ to answer questions 9-14. Approximations are appropriate answers.



9. Where is $f(t) = g(t)$? $(-2,-1)$ $(3,4)$
10. Where is $f(t) > g(t)$? $(-2,3)$
11. What is $f(0) + g(0)$? $1 + -5 = -4$
12. What is $f(-1) + g(-1)$? $0 + -4 = -4$
13. Which is greater: $f(0)$ or $g(-3)$? $g(-3)$ bigger 3 or 4
14. ~~Graph $f(x) + g(x)$ from $[-1, 3]$~~ 1

$x=0$

The following table of values represents two continuous functions, $f(x)$ and $g(x)$. Use the table to answer the following questions:

x	f(x)	g(x)
-5	44	-13
-4	30	-9
-3	20	-5
-2	12	-1
-1	6	3
0	2	7
1	0	11
2	0	15
3	2	19
4	6	23
5	12	27
6	20	31

15. What is $g(-3)$? -5

16. For what value(s) is $f(x) = 0$?

2 and 1

17. For what values does $f(x)$ seem to be increasing?

(2, 6)

18. On what interval is $g(x) > f(x)$

(0, 6)

19. Which function is changing faster in the interval [-5, -1]? Why?

f(x) decreasing @ faster Rate

Use the following relationships to answer the questions below.

$h(x) = 2^x$ $\quad f(x) = 3x - 2$ $\quad g(x) = 8$ $\quad x = 4$ $\quad y = 5x + 1$

20. Which of the above relations are functions? Explain.

all but $x=4$, Fails VLT.

21. Find $f(2)$, $g(2)$, and $h(2)$.

$3(2)-2=4$ $\quad 8$ $\quad 2^2=4$

22. Write the equation for $g(x) + h(x)$.

$8+2^x = 2^x+8$

23. Where is $g(x) < h(x)$?

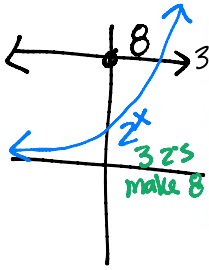
(3, ∞)

24. Where is $f(x)$ increasing?

(-∞, ∞)

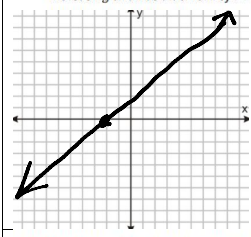
25. Which of the above functions has the fastest growth rate?

$h(x)=2^x$ * b/c you are multiplying

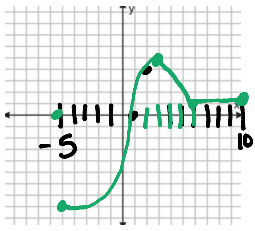


Create a graph for each of the following functions, using the given conditions

26. This function has the following features: $f(2)$ is positive; $f(-2) = 0$, $f(x)$ is always Increasing and has a domain of All Real Numbers.

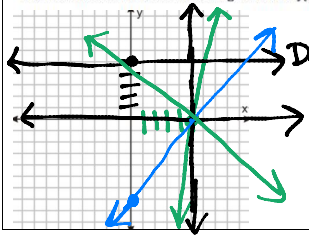


27. This function has the following features: $f(3) > f(6)$; $f(1) = 0$; $f(2) = 4$; $f(x)$ is increasing from [-5, 3]; has a domain from [-5, 10]



* Cross

28. This function has the following features: $f(x)$ has a constant rate of change; $f(5) = 0$



Dalton's Dynasty

Mac wants a curve - lame

HW

20) $P(t) = 256$ $t=5$

$8(2)^t$

$8(2)^3 = 64$

$8(2)^4 = 128$

$8(2)^5 = 256$

21) $P(12) =$

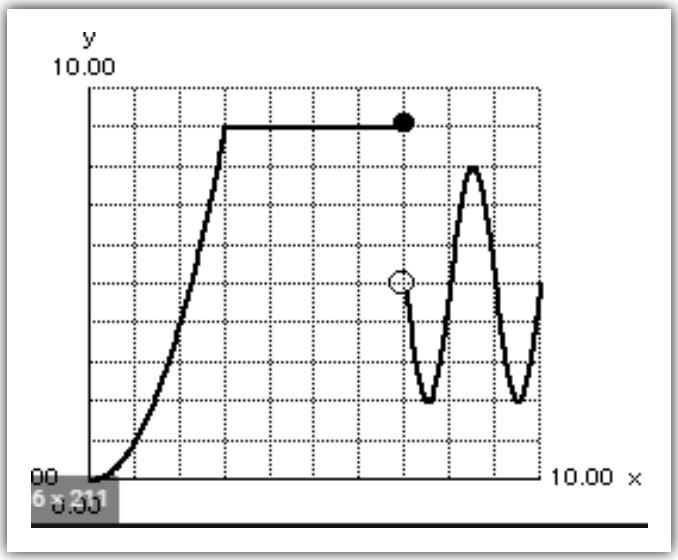
$8(2)^{12} = 32768$

22) $P(10)$

$8(2)^{10}$

≈ 14 weeks

$8(2)^{22}$



Find the following

f(1) = f(5) = f(10) =

f(x) = 9 f(x) = 5 f(x) = 1

There may be more than 1 x-value for these