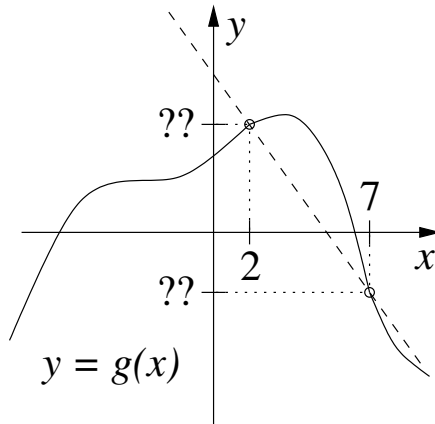
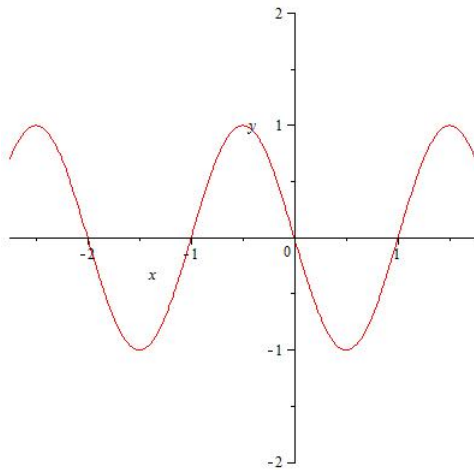


1. Suppose the graph below is the graph of a function $y = g(x)$.
- (a) Fill in the missing y -coordinates as best you can.
 - (b) Find the equation of the indicated line.
 - (c) What if, instead of 2 and 7, we have unknown constants a and b ?

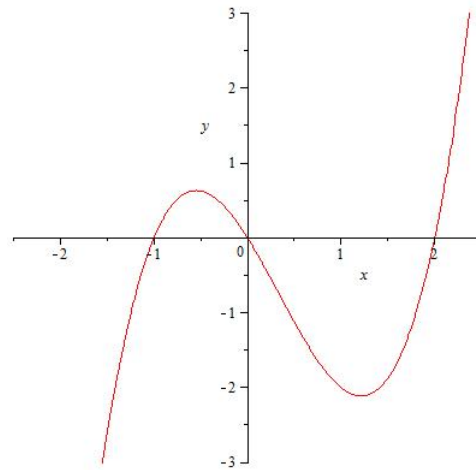


2. Find *all* solutions x to the equation $2 \sin(5x) - 1 = 0$. Give *exact* values, in terms of π , not decimal approximations.

3. Consider:



$$y = f_1(x)$$



$$y = f_2(x)$$

$$f_3(x) = x^3 - x^2 - 2x$$

$$f_4(x) = x^4 + x^3 - 4x^2 - 4x$$

x	$f_5(x)$
-2.7	0.8090
-2.4	0.9511
-2.1	0.3090
-1.8	-0.5878
-1.5	-1
-1.2	-0.5878
-0.9	0.3090
-0.6	0.9511
-0.3	0.8090
0	0

x	$f_5(x)$
0.3	-0.8090
0.6	-0.9511
0.9	-0.3090
1.2	0.5878
1.5	1
1.8	0.5878
2.1	-0.3090
2.4	-0.9511
2.7	-0.8090

x	$f_6(x)$
-2.5	8.4375
-1.9	-0.6669
-1.7	-1.3209
-1.3	-0.9009
-1.2	-0.6144
-1	0
-0.4	0.9216
-0.3	0.8211
0.1	-0.4389
0.2	-0.9504

x	$f_6(x)$
0.3	-1.5249
0.8	-4.8384
0.9	-5.4549
1	-6
1.7	-5.0949
1.9	-2.1489
2.1	2.6691
2.5	19.6875
2.6	25.8336

Match the functions from among $f_1, f_2, f_3, f_4, f_5, f_6$ that are most likely to be equal. Explain your reasoning; in particular, explain why functions that you think are *not* equal are not equal.