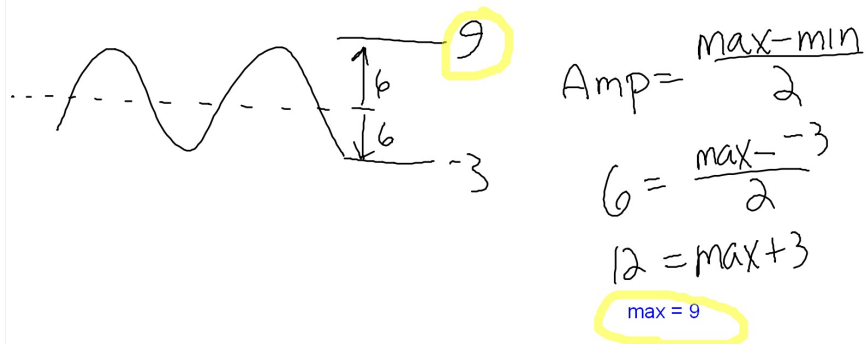


# Bellwork Thursday, March 27, 2014

1. The amplitude of a periodic function is 6. The minimum value of the function is -3. Find the maximum value of the function.



2. Given  $\theta = 170^\circ$  which of the following angles is a coterminal angle to  $\theta$ ?  
a)  $2870^\circ$  b)  $3050^\circ$  c)  $-1640^\circ$  d)  $-2380^\circ$

3. Given  $\theta = 55^\circ$  which of the following angles is a coterminal angle to  $\theta$ ?  
a)  $-2145^\circ$  b)  $1485^\circ$  c)  $-1745^\circ$  d)  $1155^\circ$

4. Given the following:

$$\sin 30^\circ = \frac{1}{2} \quad \cos 30^\circ = \frac{\sqrt{3}}{2} \quad \sin 60^\circ = \frac{\sqrt{3}}{2} \quad \cos 60^\circ = \frac{1}{2}$$

Find the exact value of each.

a)  $\cos 780^\circ = \frac{1}{2}$

$780^\circ$  is coterminal with  $60^\circ$  therefore  $\cos 780^\circ = \cos 60^\circ$

b)  $\sin -690^\circ = -\frac{1}{2}$

$-690^\circ$  is coterminal with  $30^\circ$  therefore  $\sin -690^\circ = \sin 30^\circ$

c)  $\tan 390^\circ$

$\tan 30^\circ = \frac{1}{\sqrt{3}}$   
 $\tan 390^\circ = \frac{1}{\sqrt{3}}$

$390^\circ$  is coterminal with  $30^\circ$  therefore  $\tan 390^\circ = \tan 30^\circ$

5. A machine begins recording two periodic functions at the same time. The first has a period of 6 sec and the second has a period of 7 sec. After 20 seconds, the machine begins recording a third periodic function, which has a period of 8 sec. How many seconds after the machine began recording the original two functions will all three functions be at the beginning of their cycles?

	1st function	2nd function	3rd function
Start of a cycle	0	0	20
	6	7	28
	12	14	36
	18	21	44
	24	28	52
	30	35	60
	36	42	68
	42	49	76
	48	56	84
	54	63	92
	60	70	100
	66	77	108
	72	84	116
	78	91	124
	84	98	132
	90	105	140
	96	112	148
	102	119	156
	108	126	164
	114	133	172
	120	140	180
	126	147	188
	132	154	196
	138	161	204
	144	168	212
	150	175	220
	156	182	228
	162	189	236
	168	196	244
	174	203	252
	180	210	260
	186	217	268
	192	224	276
	198	231	284
	204	238	292
	210	245	300
	216	252	308
	222	259	316
	228	266	324
	234	273	332
	240	280	340
	246	287	348
	252	294	356
	258	301	364
	264	308	372
	270	315	380
	276	322	388
	282	329	396
	288	336	404
	294	343	412
	300	350	420
	306	357	428
	312	364	436
	318	371	444
	324	378	452
	330	385	460
	336	392	468
	342	399	476
	348	406	484
	354	413	492
	360	420	500
	366	427	508
	372	434	516
	378	441	524
	384	448	532
	390	455	540
	396	462	548
	402	469	556
	408	476	564
	414	483	572
	420	490	580
	426	497	588
	432	504	596
	438	511	604
	444	518	612
	450	525	620
	456	532	628
	462	539	636
	468	546	644
	474	553	652
	480	560	660
	486	567	668
	492	574	676
	498	581	684
	504	588	692
	510	595	700
	516	602	708
	522	609	716
	528	616	724
	534	623	732
	540	630	740
	546	637	748
	552	644	756
	558	651	764
	564	658	772
	570	665	780
	576	672	788
	582	679	796
	588	686	804
	594	693	812
	600	700	820
	606	707	828
	612	714	836
	618	721	844
	624	728	852
	630	735	860
	636	742	868
	642	749	876
	648	756	884
	654	763	892
	660	770	900
	666	777	908
	672	784	916
	678	791	924
	684	798	932
	690	805	940
	696	812	948
	702	819	956
	708	826	964
	714	833	972
	720	840	980
	726	847	988
	732	854	996
	738	861	1004
	744	868	1012
	750	875	1020
	756	882	1028
	762	889	1036
	768	896	1044
	774	903	1052
	780	910	1060
	786	917	1068
	792	924	1076
	798	931	1084
	804	938	1092
	810	945	1100
	816	952	1108
	822	959	1116
	828	966	1124
	834	973	1132
	840	980	1140
	846	987	1148
	852	994	1156
	858	1001	1164
	864	1008	1172
	870	1015	1180
	876	1022	1188
	882	1029	1196
	888	1036	1204
	894	1043	1212
	900	1050	1220
	906	1057	1228
	912	1064	1236
	918	1071	1244
	924	1078	1252
	930	1085	1260
	936	1092	1268
	942	1099	1276
	948	1106	1284
	954	1113	1292
	960	1120	1300
	966	1127	1308
	972	1134	1316
	978	1141	1324
	984	1148	1332
	990	1155	1340
	996	1162	1348
	1002	1169	1356
	1008	1176	1364
	1014	1183	1372
	1020	1190	1380
	1026	1197	1388
	1032	1204	1396
	1038	1211	1404
	1044	1218	1412
	1050	1225	1420
	1056	1232	1428
	1062	1239	1436
	1068	1246	1444
	1074	1253	1452
	1080	1260	1460
	1086	1267	1468
	1092	1274	1476
	1098	1281	1484
	1104	1288	1492
	1110	1295	1500
	1116	1302	1508
	1122	1309	1516
	1128	1316	1524
	1134	1323	1532
	1140	1330	1540
	1146	1337	1548
	1152	1344	1556
	1158	1351	1564
	1164	1358	1572
	1170	1365	1580
	1176	1372	1588
	1182	1379	1596
	1188	1386	1604
	1194	1393	1612
	1200	1400	1620
	1206	1407	1628
	1212	1414	1636
	1218	1421	1644
	1224	1428	1652
	1230	1435	1660
	1236	1442	1668
	1242	1449	1676
	1248	1456	1684
	1254	1463	1692
	1260	1470	1700
	1266	1477	1708
	1272	1484	1716
	1278	1491	1724
	1284	1498	1732
	1290	1505	1740
	1296	1512	1748
	1302	1519	1756
	1308	1526	1764
	1314	1533	1772
	1320	1540	1780
	1326	1547	1788
	1332	1554	1796
	1338	1561	1804
	1344	1568	1812
	1350	1575	1820
	1356	1582	1828
	1362	1589	1836
	1368	1596	1844
	1374	1603	1852
	1380	1610	1860
	1386	1617	1868
	1392	1624	1876
	1398	1631	1884
	1404	1638	1892
	1410	1645	1900
	1416	1652	1908
	1422	1659	1916
	1428	1666	1924
	1434	1673	1932
	1440	1680	1940
	1446	1687	1948
	1452	1694	1956
	1458	1701	1964
	1464	1708	1972
	1470	1715	1980
	1476	1722	1988
	1482	1729	1996
	1488	1736	2004
	1494	1743	2012
	1500	1750	2020
	1506	1757	2028
	1512	1764	2036
	1518	1771	2044
	1524	1778	2052
	1530	1785	2060
	1536	1792	2068
	1542	1799	2076
	1548	1806	2084
	1554	1813	2092
	1560	1820	2100
	1566	1827	2108
	1572	1834	2116
	1578	1841	2124
	1584	1848	2132
	1590	1855	2140
	1596	1862	2148
	1602	1869	2156
	1608	1876	2164
	1614	1883	2172
	1620	1890	2180
	1626	1897	2188
	1632	1904	2196
	1638	1911	2204
	1644	1918	2212
	1650	1925	2220
	1656	1932	2228
	1662	1939	2236
	1668	1946	2244
	1674	1953	2252
	1680	1960	2260
	1686	1967	2268
	1692	1974	2276
	1698	1981	2284
	1704	1988	2292
	1710	1995	2300
	1716	2002	2308
	1722	2009	2316
	1728	2016	2324
	1734	2023	2332
	1740	2030	2340
	1746	2037	2348
	1752	2044	2356
	1758	2051	2364
	1764	2058	2372
	1770	2065	2380
	1776	2072	2388
	1782	2079	2396
	1788	2086	2404
	1794	2093	2412
	1800	2100	2420
	1806	2107	2428
	1812	2114	2436
	1818	2121	2444
	1824	2128	2452
	1830	2135	2460
	1836	2142	2468
	1842	2149	2476
	1848	2156	2484
	1854	2163	2492
	1860	2170	2500
	1866	2177	2508
	1872	2184	2516
	1878	2191	2524
	1884	2198	2532
	1890	2205	2540
	1896	2212	2548
	1902	2219	2556
	1908	2226	2564
	1914	2233	2572
	1920	2240	2580
	1926	2247	2588
	1932	2254	2596
	1938	2261	2604
	1944	2268	2612
	1950	2275	2620
	1956	2282	2628
	1962	2289	2636
	1968	2296	2644
	1974	2303	2652
	1980	2310	2660
	1986	2317	2668
	1992	2324	2676
	1998	2331	2684
	2004	2338	2692
	2010	2345	2700
	2016	2352	2708
	2022	2359	2716
	2028	2366	2724
	2034	2373	2732
	2040	2380	2740
	2046	2387	2748
	2052	2394	2756
	2058	2401	2764
	2064	2408	2772
	2070	2415	2780
	2076	2422	2788
	2082	2429	2796
	2088	2436	2804
	2094	2443	2812
	2100	2450	2820
	2106	2457	2828
	2112	2464	2836
	2118	2471	2844
	2124	2478	2852
	2130	2485	2860
	2136	2492	2868
	2142	2499	2876
	2148	2506	2884
	2154	2513	2892
	2160	2520	2900
	2166	2527	2908
	2172	2534	2916
	2178	2541	2924
	2184	2548	2932
	2190	2555	2940
	2196		