Trig 6.3

I have/who has

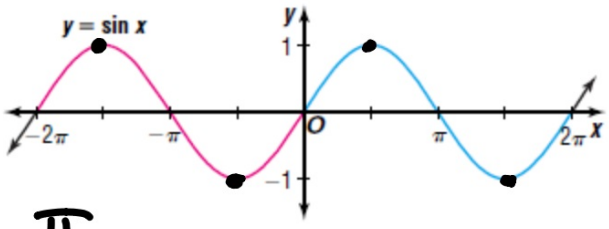
Identify periodic functions
Use the graphs of sine and cosine functions

sine

cosine

period

periodic functions



$\frac{\pi}{2} + 2\pi n$

1

↓

$\csc = \frac{1}{\sin}$

$\sin = \frac{1}{\csc}$

Properties of the Graph of $y = \sin x$

1. The period is 2π.
2. The domain is the set of real numbers.
3. The range is the set of real numbers between -1 and 1, inclusive.
4. The x-intercepts are located at πn, where n is an integer.
5. The y-intercept is 0.
6. The maximum values are $y = 1$ and occur when $x = \frac{\pi}{2} + 2\pi n$, where n is an integer.
7. The minimum values are $y = -1$ and occur when $x = \frac{3\pi}{2} + 2\pi n$, where n is an integer.

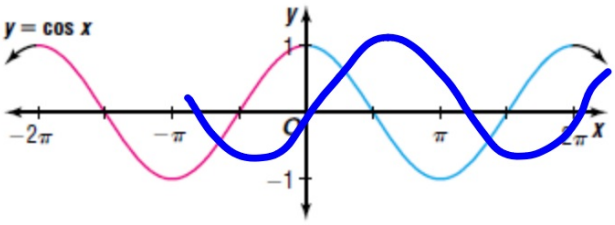
<http://ck022.k12.sd.us/images/SineCurve.MOV>

$0 \leq x \leq 2\pi$

greater (higher)

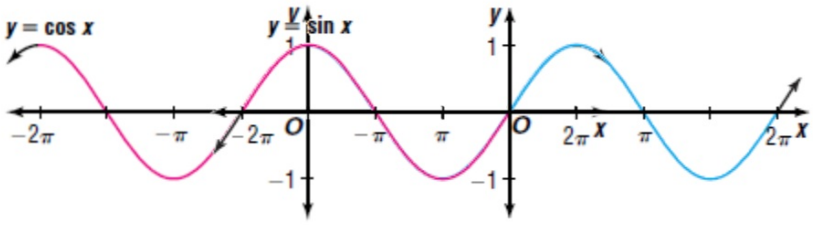
$y = \sin x$ $\quad y = (\sin(x))(\cos(x))$

$y = -\cos x$ $\quad y = 1$

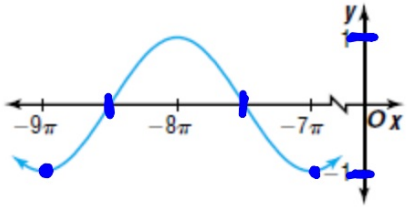


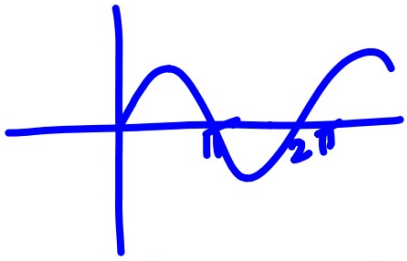
Properties of the Graph of $y = \cos x$

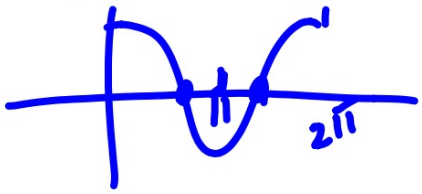
1. The period is 2π.
2. The domain is the set of real numbers.
3. The range is the set of real numbers between -1 and 1, inclusive.
4. The x-intercepts are located at $\frac{\pi}{2} + \pi n$, where n is an integer.
5. The y-intercept is 1.
6. The maximum values are $y = 1$ and occur when $x = \pi n$, where n is an even integer.
7. The minimum values are $y = -1$ and occur when $x = \pi n$, where n is an odd integer.


y = cos x
y = sin x
y
1
−2π
−π
O
π
2π
x
−1

6 Determine whether the graph represents $y = \sin x$, $y = \cos x$, or neither.







Does it have a range -1<y<1 ?
Does it have appropriate period? (360 or 2pi)
Does it have appropriate x-intercepts?

Triangle puzzle