Answer on Question #60962 – Math – Calculus

Question

Sketch the graph of $y = sinx\ cosx$ for $-2\pi < x < 2\pi$

Solution

If $y = \sin(x)\cos(x)$, $-2\pi < x < 2\pi$, then $y = \sin(x)\cos(x) = \frac{1}{2}sin(2x), -2\pi < x < 2\pi$.

Thus, $y = \frac{1}{2}sin(2x), -2\pi < x < 2\pi$.

The graph of $y = \frac{1}{2}sin(2x)$ is obtained from the graph of $y = sin(x)$ by shrinking the horizontal coordinate by $\frac{1}{2}$ and shrinking the vertical coordinate by $\frac{1}{2}$. (The order of transformations is not important in this example. You will get the same answer here if you shrink vertically by $\frac{1}{2}$ before shrinking horizontally by $\frac{1}{2}$).