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7. Determine the amplitude of each function. Then, use the language of transformations to describe how each graph is related to the graph of $y = \sin x$.

a) $y = 3 \sin x$ **b)** $y = -5 \sin x$

c) $y = 0.15 \sin x$ **d)** $y = -\frac{2}{3} \sin x$

7. a) Amplitude is 3; stretched vertically by a factor of 3 about the x-axis.

b) Amplitude is 5; stretched vertically by a factor of 5 about the x-axis and reflected in the x-axis.

c) Amplitude is 0.15; stretched vertically by a factor of 0.15 about the x-axis.

d) Amplitude is $\frac{2}{3}$; stretched vertically by a factor of $\frac{2}{3}$ about the x-axis and reflected in the x-axis.

these are all vertically → ≡ yaxis stretch

always about the opposite axis

i.e. the x-axis.

the ones w/ minus are all reflected; also into the opposite axis:

$g(x) = a \cdot f(x)$

→ a = vertical stretch

↓

if negative then vertical reflection → ≡ y-axis

↓

then reflection into the x-axis

= horizontal

the opposite of the word vertical

|||

y-axis