
MATH 1 LECTURE 5 EXERCISES WEDNESDAY 09-21-16

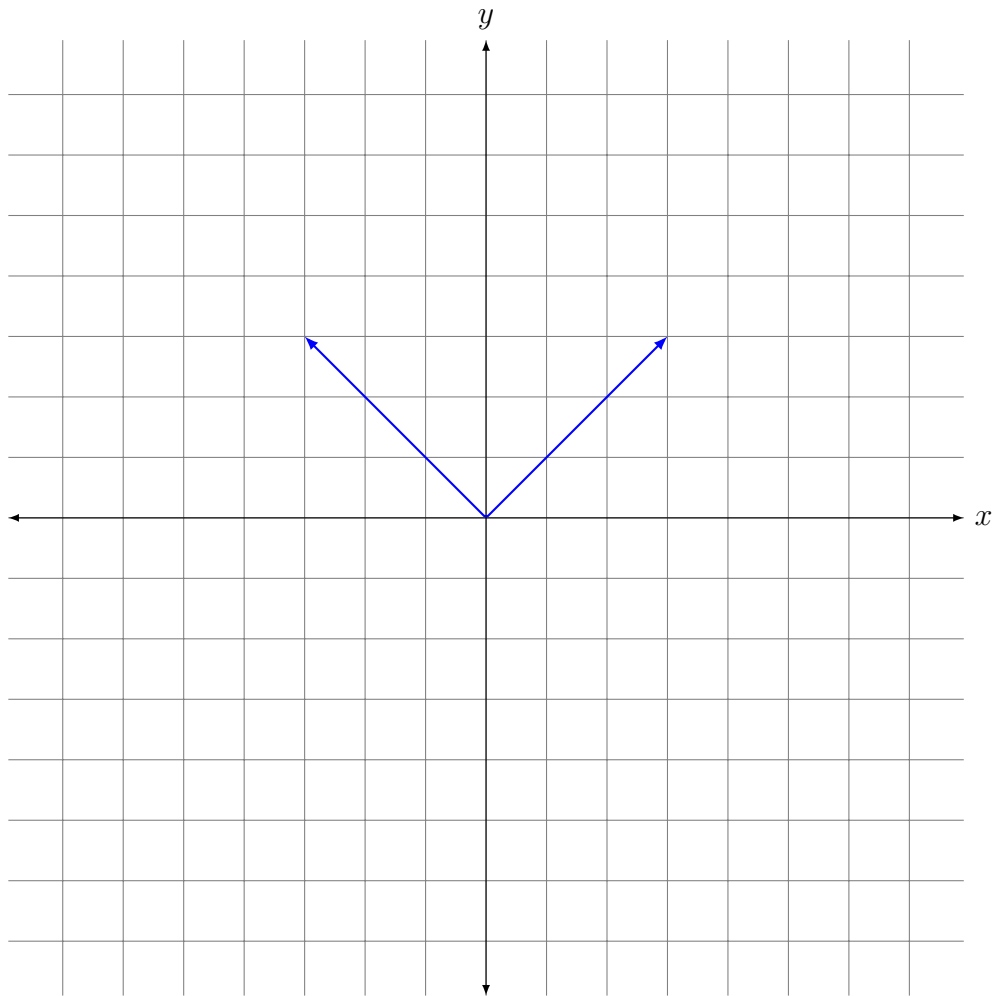
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(1) Decompose $h(x) = x^{7/2} + x^{3/2} - x^{1/2} + 5$ into a composition of the form $h = g \circ f$.

(2) Decompose $r(x) = \sqrt[4]{\frac{2x}{2x+1}}$ into a composition of the form $r = h \circ f \circ g$.

(3) Consider $f(x) = 3|x+1| - 2$. Decompose f into a composition of 4 functions.

- (4) Consider the function $f(x) = |x|$ drawn below. Graph the functions $f(x) \pm 2$, $f(x \pm 2)$, $f(\pm 2x)$, $\pm 2f(x)$, $\pm \frac{1}{2}f(x)$, $f\left(\pm \frac{1}{2}x\right)$.



- (5) Suppose a function $f : \mathbb{R} \rightarrow \mathbb{R}$ has domain $[1, 2]$ and range $[3, 5]$. Find the domain and range of $3f(x - 2) + 1$.