

LOF WKST 1

Date _____ Period _____

Describe the transformations necessary to transform the graph of $f(x)$ into that of $g(x)$.

$$1) \begin{aligned} f(x) &= x^2 \\ g(x) &= (x - 2)^2 - 2 \end{aligned}$$

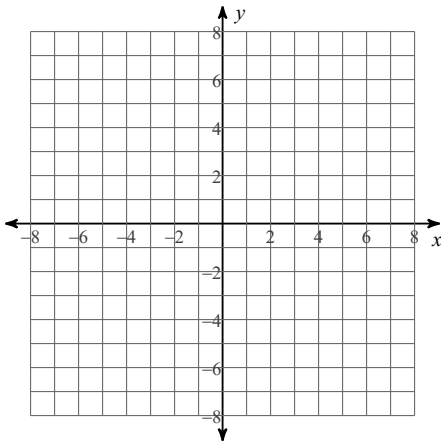
$$2) \begin{aligned} f(x) &= x^2 \\ g(x) &= (x + 2)^2 + 3 \end{aligned}$$

$$3) \begin{aligned} f(x) &= |x| \\ g(x) &= |x - 3| - 2 \end{aligned}$$

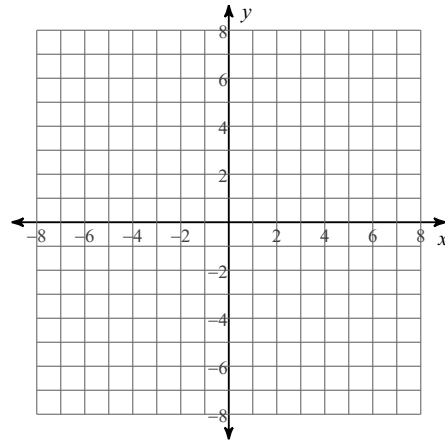
$$4) \begin{aligned} f(x) &= \sqrt{x} \\ g(x) &= \sqrt{x - 3} + 1 \end{aligned}$$

Sketch the graph of each function. State the domain and range in interval notation.

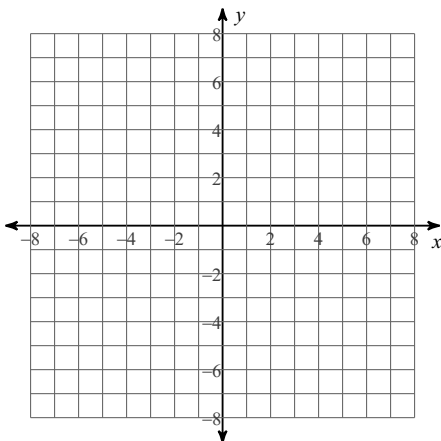
$$5) g(x) = x^2 + 1$$



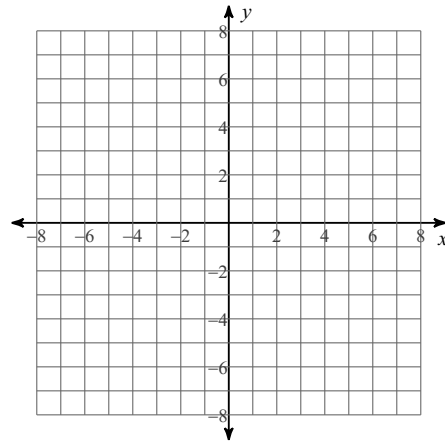
$$6) g(x) = \sqrt{x - 3}$$



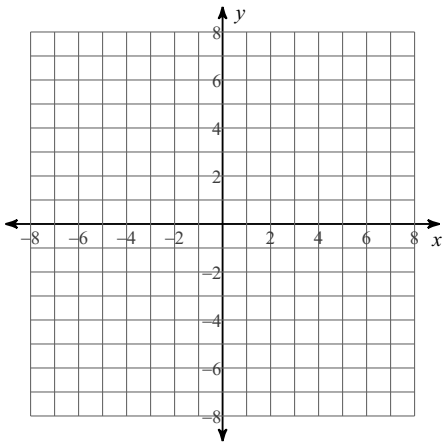
$$7) g(x) = \sqrt{x} - 1$$



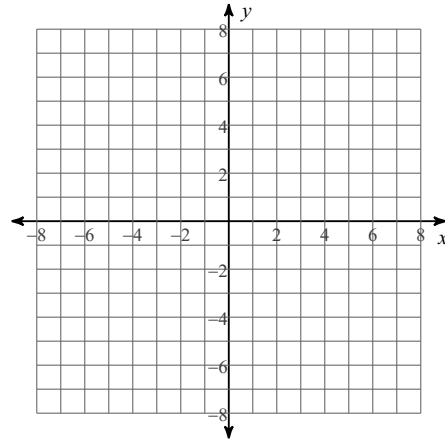
$$8) g(x) = |x| + 3$$



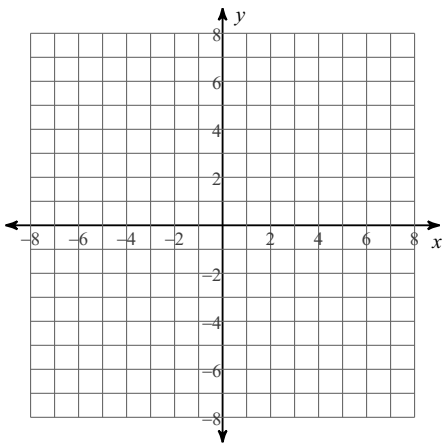
9) $g(x) = \sqrt{x+3}$



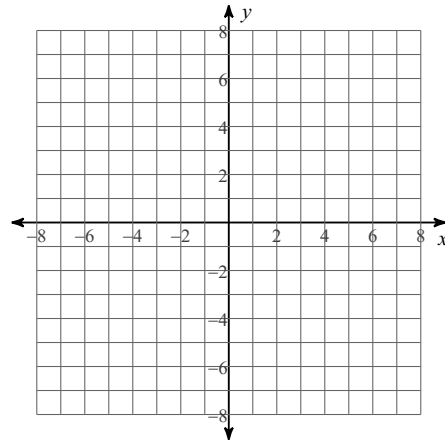
10) $g(x) = |x+2|$



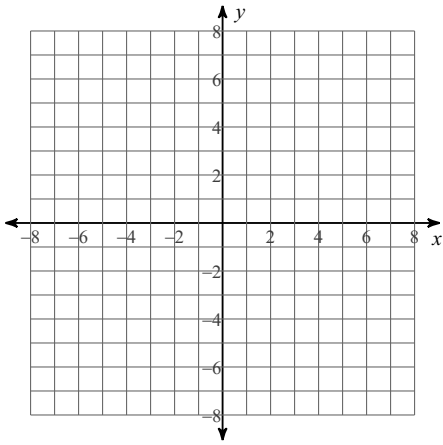
11) $g(x) = \sqrt{x+1} + 3$



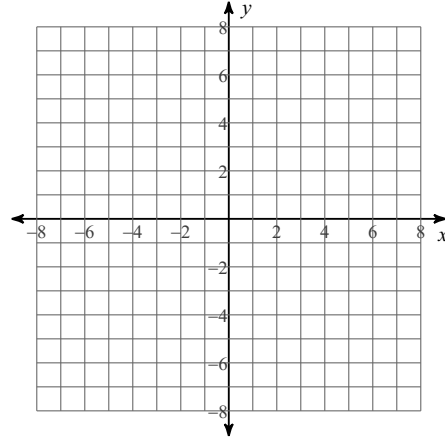
12) $g(x) = |x-2| - 1$



13) $g(x) = (x+1)^2 + 2$



14) $g(x) = 2|x| - 1$



Transform the given function $f(x)$ as described and write the resulting function as an equation.

- 15) $f(x) = \sqrt{x}$
 translate right 1 unit
 translate up 1 unit

- 16) $f(x) = \sqrt{x}$
 translate left 3 units
 translate up 1 unit

- 17) $f(x) = x^2$
 translate left 2 units
 translate up 2 units

- 18) $f(x) = |x|$
 translate left 2 units
 translate down 1 unit

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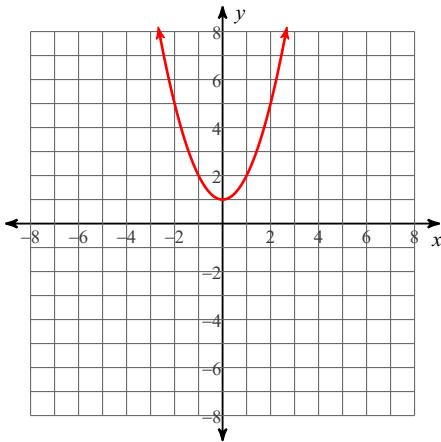
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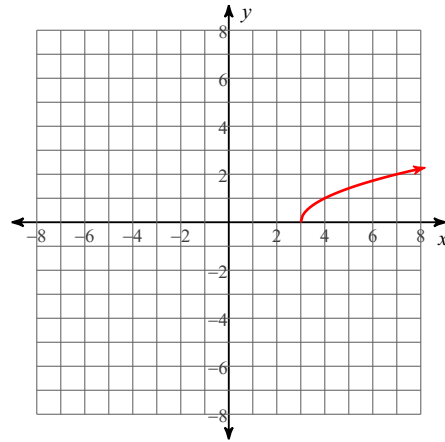
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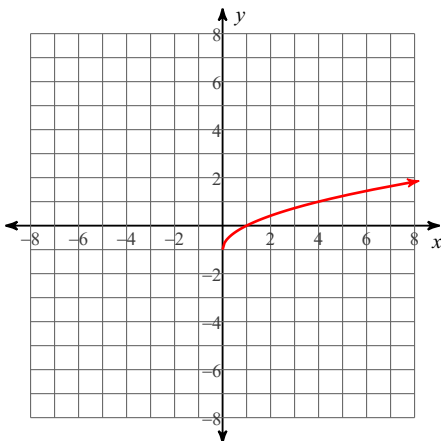
$$5) g(x) = x^2 + 1$$



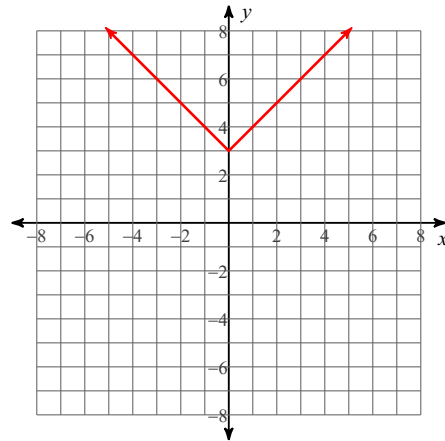
$$6) g(x) = \sqrt{x - 3}$$



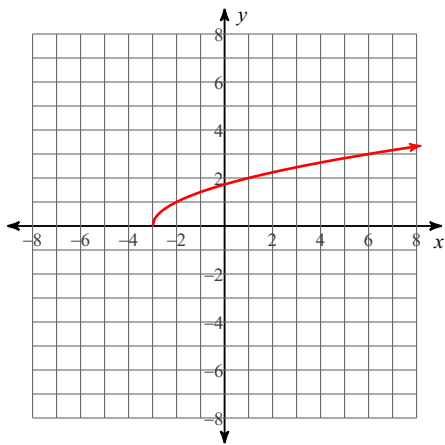
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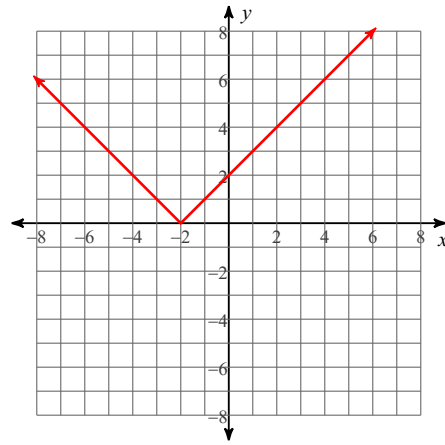
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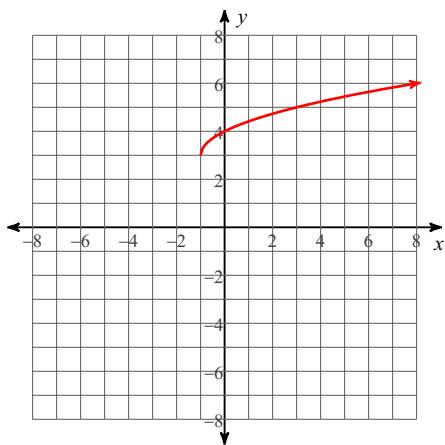
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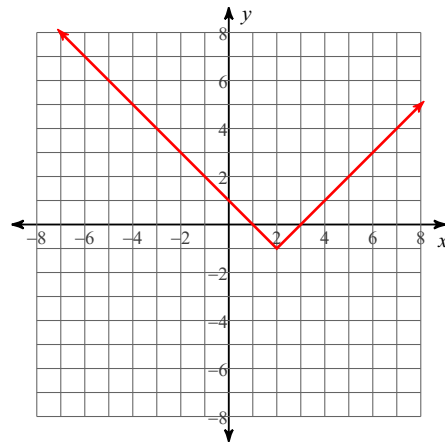
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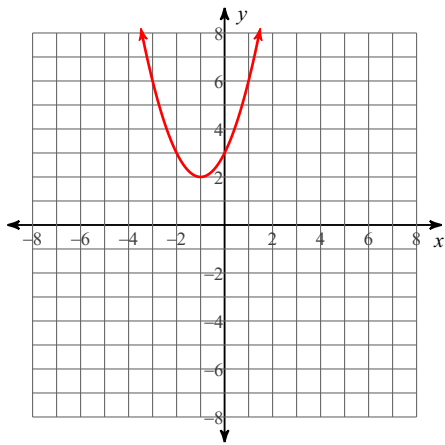
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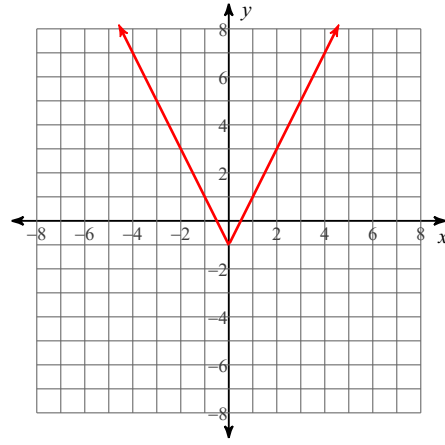
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