



Puzzle Time

What Is The Most Densely Populated Country On The Mainland Of The Americas?

Write the letter of each answer in the box containing the exercise number.

Describe the transformation of $f(x) = x^2$ represented by g .

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|--------------------------------|---------------------------|
| 1. $g(x) = -2x^2$ | 2. $g(x) = (x - 1)^2$ |
| 3. $g(x) = x^2 - 1$ | 4. $g(x) = (x + 1)^2$ |
| 5. $g(x) = \frac{1}{2}x^2 - 2$ | 6. $g(x) = (x - 2)^2 - 1$ |

Write a rule for g described by the transformations of the graph of f .

- $f(x) = x^2$; vertical stretch by a factor of 2 and a reflection in the x -axis, followed by a translation 3 units down
- $f(x) = x^2$; vertical shrink by a factor of $\frac{1}{2}$, followed by a translation 3 units left
- $f(x) = 4x^2 + 10$; horizontal stretch by a factor of 2, followed by a translation 3 units up
- $f(x) = (x - 2)^2 - 8$; horizontal shrink by a factor of $\frac{1}{2}$ and a translation 5 units down, followed by a reflection in the x -axis

Answers

- O. $g(x) = x^2 + 13$
- L. translation 1 unit right
- R. $g(x) = -(2x - 2)^2 + 13$
- S. translation 1 unit down
- V. translation 2 units right followed by a translation 1 unit down
- L. vertical shrink by a factor of $\frac{1}{2}$ followed by a translation 2 units down
- E. reflection in the x -axis and a vertical stretch by a factor of 2
- A. $g(x) = -2x^2 - 3$
- D. $g(x) = \frac{1}{2}(x + 3)^2$
- A. translation 1 unit left

1	2		3	4	5	6	7	8	9	10
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2.2 Puzzle Time

What Is Roz Savage Famous For?

1	2	3	4	5	6
7	8	9	10	11	12

Complete each exercise. Find the answer in the answer column. Write the word under the answer in the box containing the exercise number.

0 minimum WOMAN
2 maximum THE
$(-1, -9.5)$ $x = -1$ ROWER
$f(x) = -2(x + 1)^2 - 1$ OCEANS
$f(x) = x^2 - 2$ ROW
$(1, -4)$ $x = 1$ BRITISH

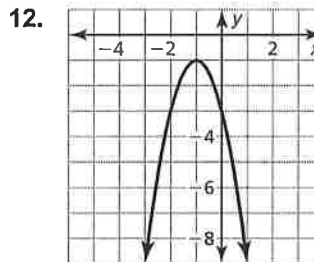
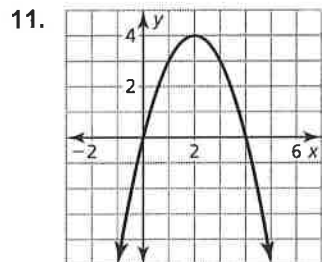
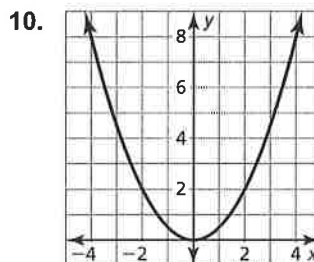
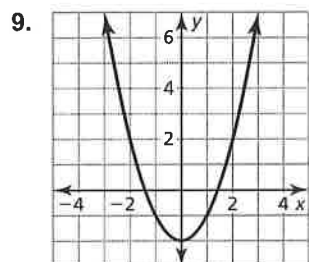
Find the vertex and axis of symmetry of the function.

1. $f(x) = 9x^2 - 3$ 2. $y = -x^2 + 2x - 5$
 3. $g(x) = -0.5x^2 - x - 10$ 4. $f(x) = -2x^2 + 8x - 1$

Find the minimum or maximum value of the function.

5. $f(x) = -3x^2 + 12x - 10$ 6. $y = -x^2 + 8$
 7. $g(x) = x^2 - 2x + 1$ 8. $y = 2x^2 - 20x$

Match the graph with its function.



8 maximum FIRST
$f(x) = -(x - 2)^2 + 4$ THREE
-50 minimum TO
$f(x) = \frac{1}{2}x^2$ ACROSS
$(0, -3)$ $x = 0$ THIS
$(2, 7)$ $x = 2$ WAS