

## Answer on Question #56099 – Math - Algebra

**Question 1.** 12: Which function transforms the graph of  $y = x^2$  so that it is first shifted down 4 units and is then reflected across the x-axis? Multiple answers may be correct check all that apply.

$$y = -(x + 4)^2$$

$$y = (-x)^2 - 4$$

$$y = -x^2 - 4$$

$$y = -x^2 + 4$$

### Solution

The correct answer is  $y = -x^2 + 4$ . (Shift down:  $y = x^2 - 4$ , reflection:  $y = -(x^2 - 4) = -x^2 + 4$ )

**Question 2.** 13: In the function  $y = \frac{1}{2}x^2$ , what effect does the number  $\frac{1}{2}$  have on the graph, as compared to the graph of the function  $y = x^2$ ? Multiple answers may be correct check all that apply.

It stretches the graph vertically by a factor of 2

It stretches the graph horizontally by the factor of 2

It shrinks the graph horizontally to  $\frac{1}{2}$  its original width

It shrinks the graph vertically to  $\frac{1}{2}$  its original height.

### Solution

The correct answers are “It stretches the graph horizontally by the factor of 2” and “It shrinks the graph vertically to  $\frac{1}{2}$  its original height”.

**Question 3.** 14: Express square root -144 in its simplest terms.

### Solution

$$\sqrt{-144} = \sqrt{144}\sqrt{-1} = 12i$$

**Question 4.** 15: Express squareroot -75 in its simplest form.

A: 5i root 15

B: 3i root 5

C: 5i root 3

D: Can not be determined.

### Solution

The correct answer is “C: 5i root 3” ( $\sqrt{-75} = \sqrt{25}\sqrt{3}\sqrt{-1} = 5i\sqrt{3}$ )