Name_____ Date _____

8.2 Puzzle Time

Where Do Birds Relax In Their Houses?

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

Compare the graph of the function to the graph of $f(x) = x^2$.

1. $j(x) = x^2 - 5$

2. $m(x) = x^2 + 4$

3. $c(x) = -x^2 - 8$

4. $r(x) = 6x^2 - 7$

5. $g(x) = \frac{1}{3}x^2 + 9$

6. $p(x) = -\frac{5}{12}x^2 - 14$

Write an equation that represents g in terms of x.

7. $f(x) = 6x^2 + 5$
$g(x) = f(x) + 3$

8. $f(x) = \frac{3}{4}x^2 + 7$
$g(x) = f(x) - 10$

9. $f(x) = -\frac{8}{9}x^2 - 13$
$g(x) = f(x) - 2$

10. $f(x) = 14x^2 - 25$
$g(x) = f(x) + 18$

Find the zeros of the function.

11. $y = x^2 - 4$

12. $y = x^2 - 81$

13. $f(x) = -x^2 + 36$

14. $f(x) = 3x^2 - 75$

15. The function $y = -2x^2 + 98$ represents the height y (in inches) of a penny x seconds after falling to the ground. Find the x-intercept.

Answers

E. $x = 9, x = -9$

N. $x = -5, x = 5$

H. $x = 7$

T. $x = -2, x = 2$

O. $x = -6, x = 6$

B. $x = 10$

T. $g(x) = 14x^2 - 7$

E. $g(x) = \frac{3}{4}x^2 - 3$

C. $g(x) = 6x^2 + 8$

O. $g(x) = -\frac{8}{9}x^2 - 15$

R. reflection in the x-axis, translation 8 units down

F. vertical shrink by a factor of $\frac{1}{3}$, translation 9 units up

H. translation 4 units up

P. reflection in the x-axis, vertical shrink by a factor of $\frac{5}{12}$, translation 14 units down

N. vertical stretch by a factor of 6, translation 7 units down

R. translation 5 units down

9	14		11	2	8		5	1	13	4	10		6	12	3	7	15