3. $x = -1$ and $x = -2$

4. $x = -1$ and $x = 3$

5. $x = 3$ and $x = -3$

6. $x = 2$ and $x = -2$

7. $x = -1$

8. $x = 1$

9. no real solution

10. no real solution

11. no real solution

12. $x = 10$ and $x = 2$

13. $s = \pm 12$

14. $a = \pm 9$

15. $z = 1$ and $z = 11$

16. $p = -3$ and $p = 11$

17. $x = 1 \pm \sqrt{2}$

18. $x = -2 \pm \frac{\sqrt{26}}{2}$

19. no real solution

20. $x = \pm\sqrt{5}$

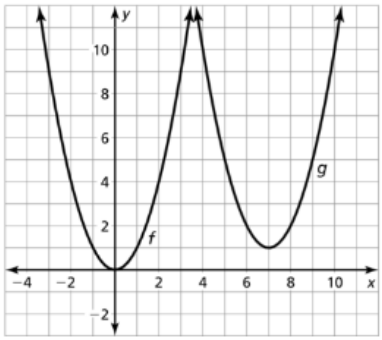
21. A, B, and E

22. B; Solving the given equation using square roots produces $x = -1$ and $x = 4$. Graph B is the only graph that has $x = -1$ and $x = 4$ as the x-intercepts.

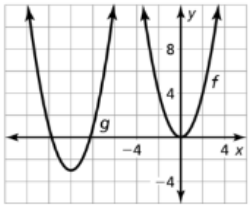
23. The $\pm$ was not used when taking the square root; $2(x + 1)^2 + 3 = 21$; $2(x + 1)^2 = 18$; $(x + 1)^2 = 9$; $x + 1 = \pm 3$; $x = 2$ and $x = -4$

24. The square root of a negative number does not exist; $-2x^2 - 8 = 0$; $-2x^2 = 8$; $x^2 = -4$; The equation has no real solution.

11. The graph of g is a translation 7 units right and 1 unit up of the graph of f.



12. The graph of g is a translation 10 units left and 3 units down of the graph of f.



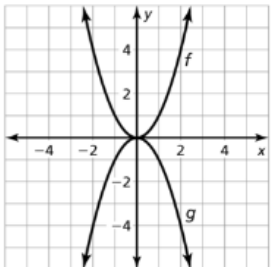
13. A; The graph has been translated 1 unit right.

14. D; The graph has been translated 1 unit up.

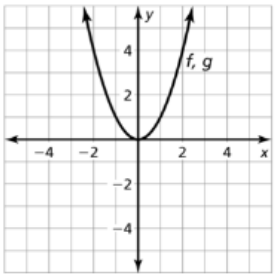
15. C; The graph has been translated 1 unit right and 1 unit up.

16. B; The graph has been translated 1 unit left and 1 unit down.

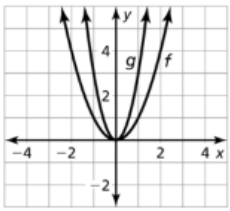
17. The graph of g is a reflection in the x-axis of the graph of f.



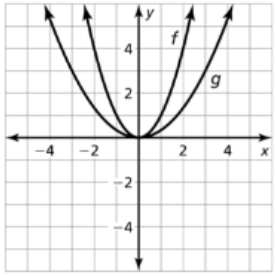
18. The graph of g is a reflection in the y-axis of the graph of f.



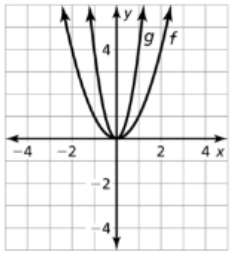
19. The graph of g is a vertical stretch by a factor of 3 of the graph of f.



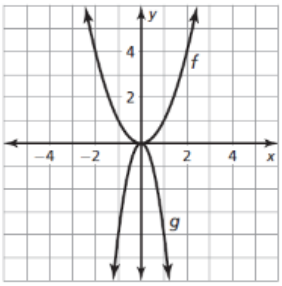
20. The graph of g is a vertical shrink by a factor of $\frac{1}{3}$ of the graph of f.



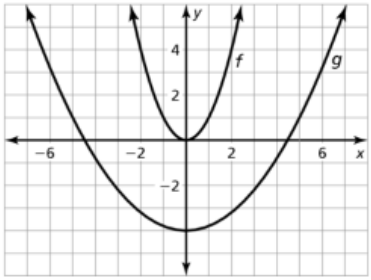
21. The graph of g is a horizontal shrink by a factor of $\frac{1}{2}$ of the graph of f.



22. The graph of g is a horizontal shrink by a factor of $\frac{1}{2}$ followed by a reflection in the x-axis of the graph of f.



23. The graph of g is a vertical shrink by a factor of $\frac{1}{5}$ followed by a translation 4 units down.



24. The graph of g is a vertical shrink by a factor of $\frac{1}{2}$ followed by a translation 1 unit right.