

**Problem 1 – Square Roots**

Solve the equations below by graphing them on the calculator and finding the intersection with the x-axis (if there is one). To find the intersection, select **MENU > Points & Lines > Intersection Point(s)**, then select the function and the x-axis. To find the coordinates, press **MENU > Actions > Coordinates and Equations**, and then select the intersection point.

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|--------------------------|-----------------|--------------------------|-----------------|
| 1. $\sqrt{x} - 3 = 0$ | Solution: _____ | 2. $2\sqrt{x+2} - 4 = 0$ | Solution: _____ |
| 3. $-\sqrt{x-2} + 5 = 0$ | Solution: _____ | 4. $-3\sqrt{x-4} = 0$ | Solution: _____ |
| 5. $\sqrt{x} + 1 = 0$ | Solution: _____ | 6. $\sqrt{x-2} + 3 = 0$ | Solution: _____ |

Problem 2 – Cubic Roots

Solve the equations below by graphing them and finding the intersection with the x-axis (if there is one).

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|----------------------------|-----------------|------------------------------|-----------------|
| 7. $\sqrt[3]{x} - 2 = 0$ | Solution: _____ | 8. $3\sqrt[3]{x+3} = 0$ | Solution: _____ |
| 9. $\sqrt[3]{x+1} - 4 = 0$ | Solution: _____ | 10. $-2\sqrt[3]{x} + 6 = 0$ | Solution: _____ |
| 11. $\sqrt[3]{x} + 2 = 0$ | Solution: _____ | 12. $2\sqrt[3]{x-4} + 3 = 0$ | Solution: _____ |

Extension

John wants to place new ATMs exactly 5 miles (in a straight line) from the bank and at the intersection of two streets. In his city, each block is 1 mile long and his bank is located 1 block east and 2 blocks north of the city center.

Drag the ATM point on page 3.2 and use the distance formula to answer the following questions:

13. If he installs a machine 3 blocks north, how far east/west should the ATM be?
14. If he installs a machine 3 blocks south, how far east/west should the ATM be?
15. If he installs a machine 4 blocks east, how far north/south should the ATM be?
16. If he installs a machine 4 blocks west, how far north/south should the ATM be?