

Practice Problems - Calculator Use Allowed**List all the number sets that the follow numbers belong to:**

65) -7

66) 0

67) $\sqrt{5}$

68) $\sqrt[3]{-8}$

- 69) The school that Daniel goes to is selling tickets to the annual dance competition. On the first day of ticket sales the school sold 3 senior citizen tickets and 8 student tickets for a total of \$124. The school took in \$70 on the second day by selling 4 senior citizen tickets and 2 student tickets. What is the price each of one senior citizen ticket and one student ticket?

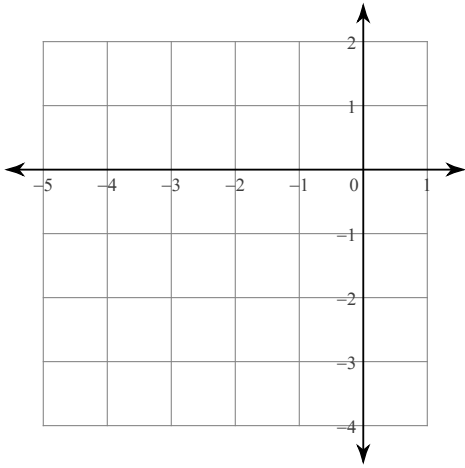
Find the value that completes the square and then rewrite as a perfect square.

70) $m^2 - 38m + \underline{\hspace{1cm}}$

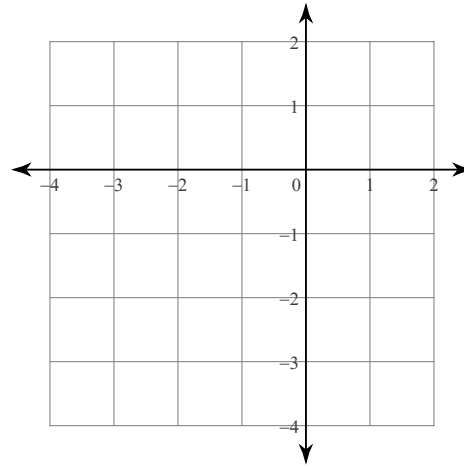
71) $x^2 - 40x + \underline{\hspace{1cm}}$

Sketch the graph of each function and identify the vertex and the equation of the axis of symmetry.

72) $y = -x^2 - 6x - 8$



73) $y = -x^2 - 2x$



Divide.

74) $(n^3 + 4n^2 - 56n - 15) \div (n - 6)$

75) $(7x^3 + 62x^2 + 39x - 81) \div (x + 8)$

Find all zeros and state the multiplicity.

76) $f(x) = x(5x - 1)^2(x + 5)^3$

77) $f(x) = x^3(2x + 3)(x - 3)^2$

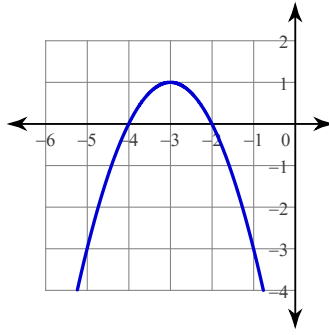
78) Sketch a graph that does NOT represent a function.

79) Give the domain and range of the following function:

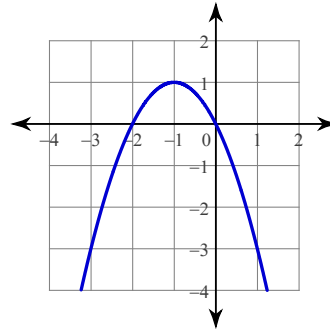
$$f(x) = \{(-3,1), (-2,0), (0,1), (1,0)\}$$

Answers to Practice Problems - Calculator Use Allowed

- 65) integer, rational, real 66) whole, integer, rational, real 67) irrational, real
 68) integer, rational, real 69) senior citizen ticket: \$12, student ticket: \$11 70) 361; $(m - 19)^2$
 71) 400; $(x - 20)^2$ 72)



73)



74) $n^2 + 10n + 4 + \frac{9}{n - 6}$

75) $7x^2 + 6x - 9 - \frac{9}{x + 8}$

76) $\{0 - \text{mult. } 1, \frac{1}{5} - \text{mult. } 2, -5 - \text{mult. } 3\}$

77) $\{0 - \text{mult. } 3, -\frac{3}{2} - \text{mult. } 1, 3 - \text{mult. } 2\}$

78) answers will vary.

79) Domain (x values): $\{-3, -2, 0, 1\}$; Range (y values): $\{0, 1\}$