NAME_____DATE_____PER_____

SHOW ALL THE WORK CLEARLY.

1. Which value of b will make the left side of the equation $x^2 + bx + \dfrac{49}{4} = 0$

   a perfect square trinomial?

   A. $\dfrac{7}{2}$ B. $\dfrac{49}{2}$ C. 7   D. $\dfrac{7}{4}$

2. The point (3,5) is on the graph of the quadratic equation $y = -x^2 + 5x - 1$. Which point is the reflection of (3,5) over the axis of symmetry of the parabola?

   A. (2, 5)   B. (-3, 5)   C. (3, -5)   D. (-3, -5)

3. The graph of which of the following functions represents a translation of the graph of $f(x) = -x^2$ four units to the right and three units down?

   A. $f(x) = (x-4)^2 - 3$ B. $f(x) = (x-3)^2 + 4$
   C. $f(x) = -(x+3)^2 - 4$ D. $f(x) = -(x-4)^2 - 3$

4. Which is the equation of the axis of symmetry for the graph of $y = 2x^2 - 8x + 9$?

   A. $x = 8$ B. $x = 2$ C. $x = \dfrac{9}{2}$ D. $x = -2$

5. Which is the vertex of the graph of $y = 3x^2 + 12x - 5$?

   A. (-2, -17)   B. (4, 91)   C. (-4, -5)   D. (2, 31)

6. What is the nature of the solutions of $x^2 - 4x + 1 = 0$?
   A. one real   B. two irrational   C. two rational   D. one irrational

7. A picture is 2 in longer than it is wide and has an area of 140 in².
   It is placed in a frame that is 2 in wider than the picture on each side.
   a) Draw and label the picture
   b) Determine the dimensions (length and width) of the
      framed picture to the nearest inch.

8. $\dfrac{-5g-2}{5g-2}$

9. $\dfrac{x^2}{x+9}$

10. $\dfrac{27x+13}{10x+30}$

11. $\dfrac{16^3}{20x}$

12. $4a^2b^2, a \neq 0; c \neq 0$; $7c$

13. $9; g \neq 7$

14. $\dfrac{1}{x+5}; x \neq 7; x \neq -5$

$x+6$
$x+4$