Name:_____

MATH 150: QUIZ 2 (1.1–1.2)

1. How old is the youngest person in the room? (Hint: His age is a^3 for some integer a.)

2. Sketch a graph showing the point $P = (3, 6)$. In which quadrant does P lie?

3. The *distance between* $P = (a, b)$ *and* $\hat{P} = (\hat{a}, \hat{b})$, denoted $d(P, \hat{P})$ is

$$d(P, \hat{P}) = \boxed{}.$$

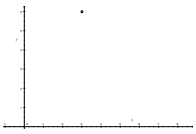
4. Compute $d(P, Q)$, where $P = (3, -5)$ and $Q = (4, 2)$.

$$d(P, Q) = \boxed{}.$$

5. If $(2, b)$ is a point on the graph of $y = 4x + 1$, what is b?

$$b = \boxed{}.$$

Solutions

1. 8
2. 

   quadrant I
3. $d(P, \hat{P}) = \sqrt{|\hat{a} - a|^2 + |\hat{b} - b|^2}$
4. $$\begin{aligned} d(P, Q) &= \sqrt{|4-3|^2 + |2-(-5)|^2} \\ &= \sqrt{|1|^2 + |7|^2} \\ &= \sqrt{1+49} \\ &= \sqrt{50} \\ &= 5\sqrt{2}. \end{aligned}$$
5. Recall that for $(2, b)$ to be on the graph, it means that $(2, b)$ is a solution of the equation $y = 4x + 1$. That means when we plug in $(2, b)$ into the equation, we should get a true statement.
   $$\begin{aligned} b &= 4(2) + 1 \\ &= 8 + 1 \\ &= 9. \end{aligned}$$