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

   \[ d(P, \hat{P}) = \]

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

   \[ d(P, Q) = \]

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

   \[ b = \]
1. 8
2.

\[ d(P, \hat{P}) = \sqrt{|\hat{a} - a|^2 + |\hat{b} - b|^2} \]

3. \[ d(P, \hat{P}) = \sqrt{|4 - 3|^2 + |2 - (-5)|^2} \]
   \[ = \sqrt{|1|^2 + |7|^2} \]
   \[ = \sqrt{1 + 49} \]
   \[ = \sqrt{50} \]
   \[ = 5\sqrt{2}. \]

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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.

\[ b = 4(2) + 1 \]
\[ = 8 + 1 \]
\[ = 9. \]