Section 2.2 Practice Master
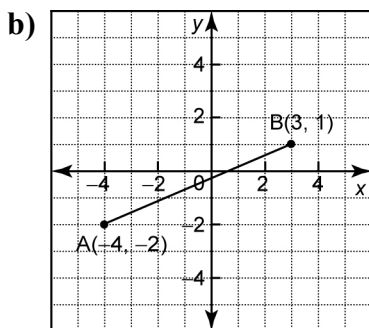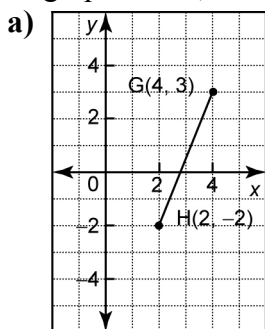
1. Estimate the length of each line segment from its graph. Then, calculate its exact length.

a)

b)

2. Calculate the length of the line segment defined by each pair of endpoints.
a) $(-5, 6)$ and $(3, -2)$
b) $(-7, -5)$ and $(-4, 6)$
c) $(-4.7, 3.8)$ and $(6.4, -5.4)$
d) $\left(-\dfrac{3}{4}, -\dfrac{2}{5}\right)$ and $\left(\dfrac{1}{4}, \dfrac{3}{5}\right)$

3. A circle has a diameter with endpoints R(-4, 6) and T(10, -8).
a) Find the length of this diameter.
b) Find the length of the radius of this circle.

4. For the triangle with vertices A(-3, 5), B(5, 3), and C(1, -5), determine the length of
a) the median from A
b) the median from B
c) the median from C

5. The vertices of $\triangle$XYZ are X(-6, 8), Y(-2, -4), and Z(4, 6).
a) Determine the exact length of each side of this triangle.
b) Classify the triangle.
c) Determine the perimeter of the triangle. Round your answer to the nearest tenth of a unit.

6. a) Show that the triangle with vertices D(-3, 0), E(0, 4), and F(3, 0) is isosceles.
b) List the coordinates of another isosceles triangle.

7. a) Determine the length of the median from vertex A in the triangle with vertices A(-6, 5), B(-2, 8), and C(4, -4).
b) Describe how you could use geometry software to verify your answer to part a).

8. a) Determine the area of the right triangle with vertices D(-3, -1), E(3, 2), and F(1, 6).
b) Describe how you could use geometry software to verify your answer to part a).

9. A line segment has endpoints S(-4, -5) and T(10, 7).
a) Find the coordinates of the midpoint of line segment ST.
b) Verify your answer to part a) by determining the distance from the midpoint to each of the endpoints and the distance between the endpoints.