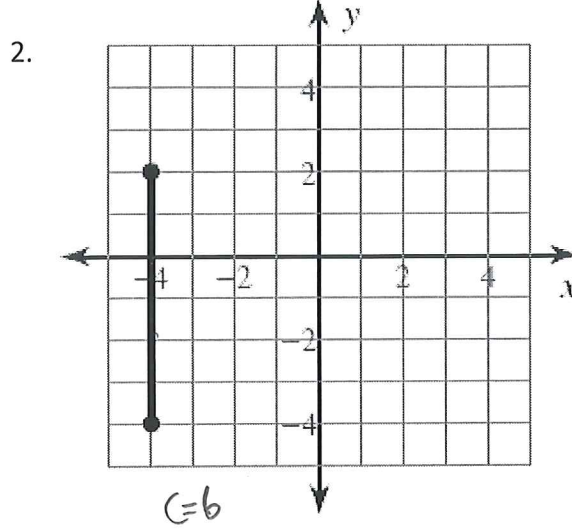
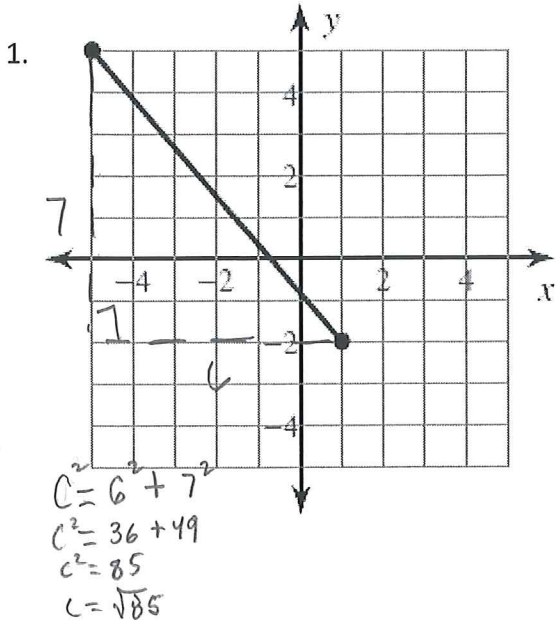
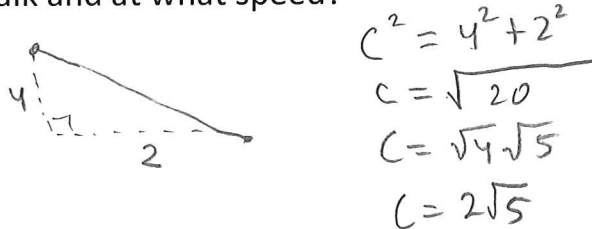


10.1b Distance Formula Homework

Find the distance between each pair of points. Round your answer to the nearest tenth, if necessary.



3. At 8 AM one day, Amir decides to walk in a straight line on the beach. After two hours of making no turns and traveling at a steady rate, Amir is two miles east and four miles north of his starting point. How far did Amir walk and at what speed?



Find the distance between each set of points using the distance formula. Give exact answers.

4. $(-7, 2)$ and $(5, 7)$

Handwritten calculations:

$$d = \sqrt{(12)^2 + (5)^2}$$

$$d = \sqrt{169}$$

$$d = 13$$

5. $(5, 9)$ and $(-7, -7)$

Handwritten calculations:

$$d = \sqrt{(-16)^2 + (-12)^2}$$

$$d = \sqrt{400}$$

$$d = 20$$

6. $(-5, -5)$ and $(1, 3)$

Handwritten calculations:

$$d = \sqrt{(-8)^2 + (-2)^2}$$

$$d = \sqrt{68}$$

$$d = \sqrt{4} \sqrt{17}$$

$$d = 2\sqrt{17}$$

7. $(-11, -5)$ and $(5, 7)$

Handwritten calculations:

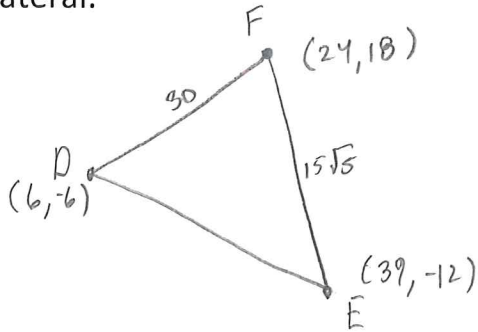
$$d = \sqrt{(-16)^2 + (-4)^2}$$

$$d = \sqrt{272}$$

$$d = 4\sqrt{17}$$

- = 1
- = 4
- 9
- 16
- 25
- 36
- 49
- 64
- 81
- 100
- 121
- 144
- 169
- 196
- 225

6. Determine whether $\triangle DEF$ with vertices $D(6,-6)$, $E(39,-12)$, and $F(24,18)$ is scalene, isosceles, or equilateral.



$$DF = \sqrt{(18)^2 + (24)^2} = \sqrt{900} = 30$$

$$FE = \sqrt{15^2 + (-30)^2} = \sqrt{1125} = 15\sqrt{5}$$

$$DE = \sqrt{33^2 + (-6)^2} = \sqrt{1125} = 15\sqrt{5}$$

For 7 and 8. Use the distance formula to determine the most specific name for the following quadrilateral (trapezoid, rhombus, kite, rectangle, square, parallelogram).

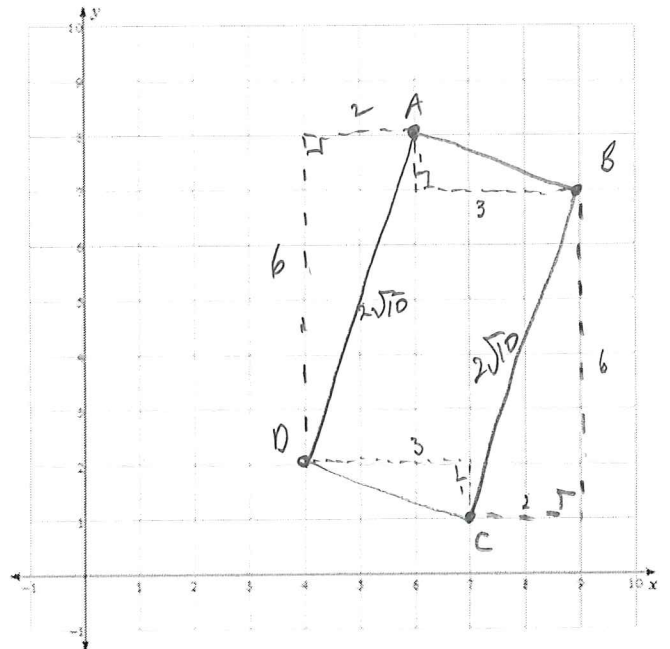
7. $A(6,8)$, $B(9,7)$, $C(7,1)$, $D(4,2)$

$$BC = \sqrt{6^2 + 2^2} = 2\sqrt{10}$$

$$AD = \sqrt{6^2 + 2^2} = 2\sqrt{10}$$

$$AB = \sqrt{3^2 + 1^2} = \sqrt{10}$$

$$DC = \sqrt{1^2 + 3^2} = \sqrt{10}$$



Parallelogram (Rectangle)

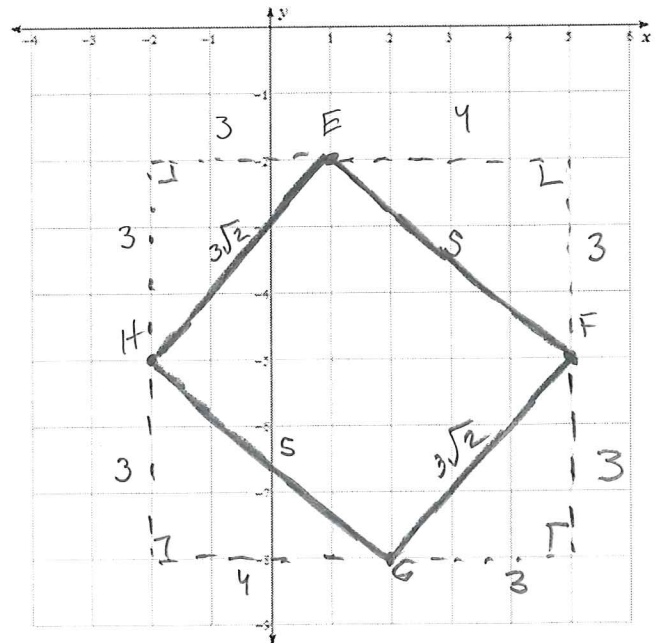
8. $E(1,-2)$, $F(5,-5)$, $G(2,-8)$, $H(-2,-5)$

$$HE = \sqrt{3^2 + 3^2} = 3\sqrt{2}$$

$$EF = \sqrt{4^2 + 3^2} = 5$$

$$HG = \sqrt{3^2 + 4^2} = 5$$

$$FG = \sqrt{3^2 + 3^2} = 3\sqrt{2}$$



Parallelogram