Practice: distance between 2 points or the length of a segment whose endpoints are those 2 points

20 questions

If there is no grid you can plot your points onto a grid but whatever you do start by calculating the Δx and Δy.

REVIEW

1. If either the Δx or Δy is equal to zero, then the distance between the (end)points will be equal to the ABS - absolute value - of the Δx or Δy that is a value other than zero.

Ex: A(7.2, 5) B(4, 5), then Δx = –3.2 & Δy = 0 and distance, AB = IΔxI = I –3.2I = 3.2 units

2. If neither the Δx or Δy is equal to zero, then use the distance formula:

$$D = \sqrt{|\Delta x|^2 + |\Delta y|^2}$$

Ex: A(12, 5) B(–3, 7),

Subtracting the
coordinates to get Δx & Δy

Δx	Δy
–3	7
– 12	5
–15	2

Then Δx = –15 & Δy = 2 -----> IΔxI = 15 & IΔyI = 2

And $AB = \sqrt{15^2 + 2^2} = \sqrt{229}$ (sqrt229)

In the problems below you will be asked to provide exact answers. This means if the length is an irrational number leave it in radical form. If you know how to simplify radicals you may also give the simplified radical form <u>with</u> the radical form.
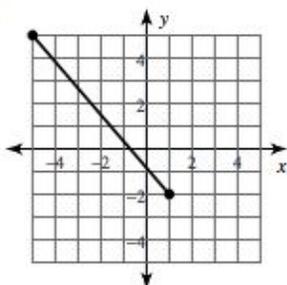

ALL answers must be exact answers.
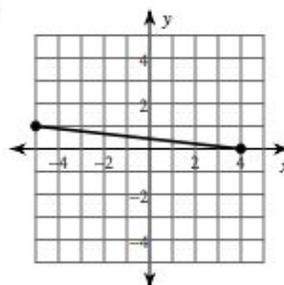Determine the length of the following segments whose coordinates are as follows:

1. D(–2, 3), G(–7, –7)   2. D(2, –9), G(–1, 4)   3. F(5, 9), G(–7, –7)

4. F(8, 5), G(–1, 3)   5. S(–10, –7), D(–8,1)   6. S(–6, –10), D(–2, –10)

7. P(0, –2), G(–5, –1)   8. P(6, 4), G(–5, –1)   9. H(3, 8), J(9, 10)

10. H(10, 1), J(9, –4)   11. A(–8, 10), B(–6, 7)   12. A(–5, 6), B(8, –4)

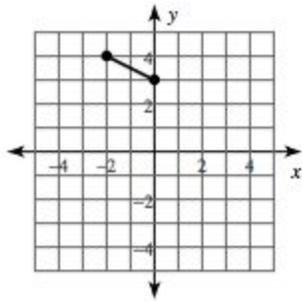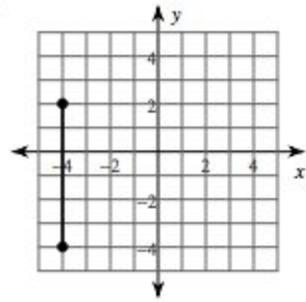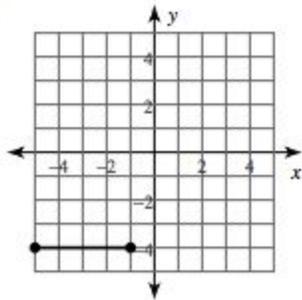Determine the length of the segments illustrated on the x-y grids below:
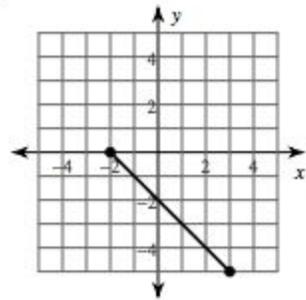
1)

2)

3)

4)

5)

6)

7. Give the coordinates of a point that is sqrt2 units away from (−1, 5).

8. Name a point that is between 50 and 60 units away from (7, −2) and state the distance between the two points.