

1.6 More Practice

(Please put your work on the same sheet as your homework. **NOT HERE.**)

1. Find the perimeter and the area of the quadrilateral with points A(2,1), B(5,5), C(5,12), and D(-3,13).

Perimeter:

$$AB = \sqrt{(-3)^2 + (-4)^2} = \sqrt{9+16} = \sqrt{25} = 5u$$

$$BC = \text{vertical line} \cdot \text{count} = 7 \text{ units}$$

$$CD = \sqrt{8^2 + (-1)^2} = \sqrt{64+1} = \sqrt{65} u$$

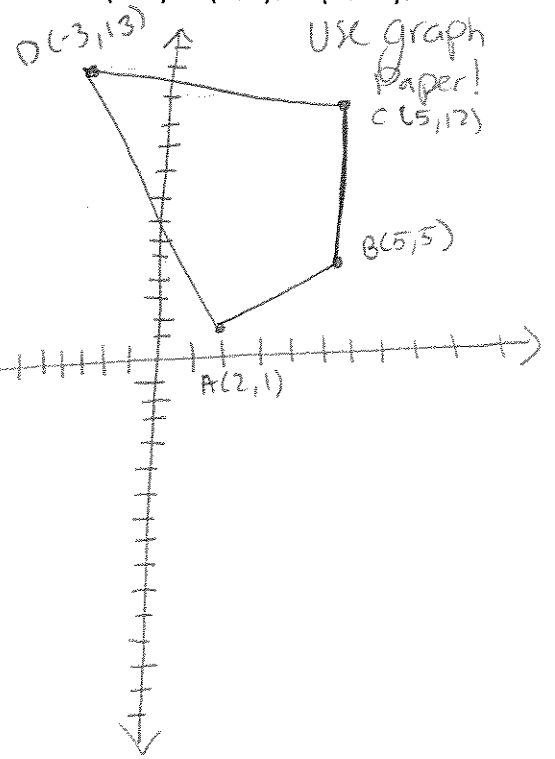
$$DA = \sqrt{(5)^2 + (-12)^2} = \sqrt{25+144} = \sqrt{169} = 13u$$

$$P = 5 + 7 + \sqrt{65} + 13 \Rightarrow \boxed{25 + \sqrt{65} \text{ units}}$$

Area
shoelace

	-3	13	
65	5	12	-36
60	5	5	25
10	2	1	5
-3	-3	13	26
132			20
	2		

$$\boxed{\text{Area} = 56 \text{ units}^2}$$



2. Approximate to the nearest unit the perimeter and find the exact area of the polygon with points D(2,2), E(5,5), G(4,8), H(0,6), and J(-2,-2).

Perimeter:

$$JD = \sqrt{(-4)^2 + (-4)^2} = \sqrt{16+16} = \sqrt{32} = 4\sqrt{2}$$

$$DE = \sqrt{(3)^2 + (-3)^2} = \sqrt{9+9} = \sqrt{18} = 3\sqrt{2}$$

$$EG = \sqrt{1^2 + (-3)^2} = \sqrt{1+9} = \sqrt{10}$$

$$JH = \sqrt{4^2 + 2^2} = \sqrt{16+4} = \sqrt{20} = 2\sqrt{5}$$

$$HJ = \sqrt{(-2)^2 + (8)^2} = \sqrt{4+64} = \sqrt{68} = 2\sqrt{17}$$

$$P \approx 25.7801 \approx \boxed{26 \text{ units}}$$

Area

	2	2	
10	5	5	10
20	4	8	40
0	0	6	24
-12	-2	-2	0
-4	2	2	-4
14			70
	2		

$$\text{Area} = | -28 | = \boxed{28 \text{ units}^2}$$

