Area with Coordinate Geometry
Box Method

1) Build a rectangle around the shape
2) Find the area of the rectangle (*A=lw)*
3) Find the area of the triangles outside of the shape (*A=.5lw)*
4) Subtract the triangle areas from the rectangle area

Find the area of the following shapes

1.

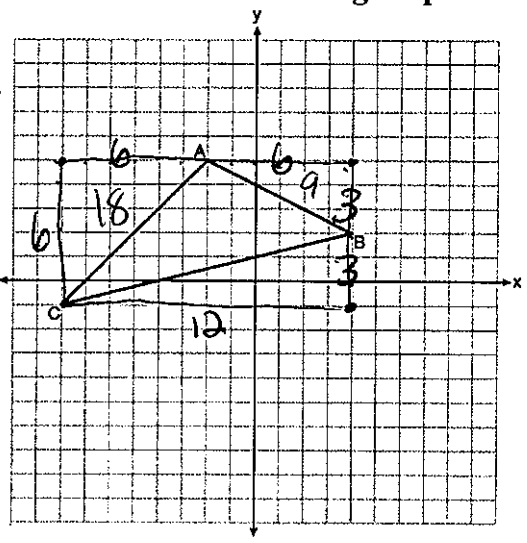
$A_R = 6(12) = 72$

$A_{T1} = \frac{1}{2}(6)(6) = 18$

$A_{T2} = \frac{1}{2}(6)(3) = 9$

$A_{T3} = \frac{1}{2}(12)(3) = 18$

18 72
+9 −45
+18 27
45



2.

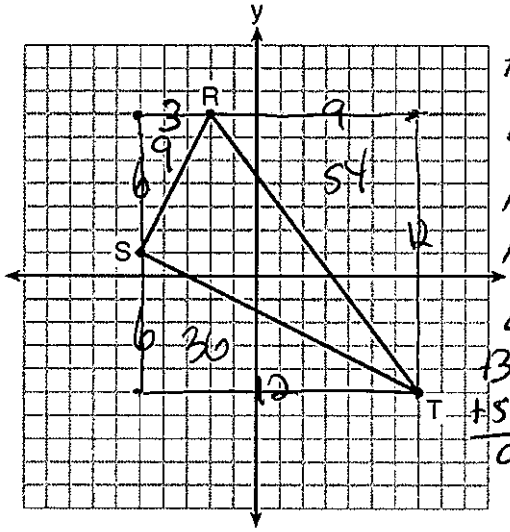
$A_R = 12(12) = 144$

$A_{T1} = \frac{1}{2}(3)(6) = 9$

$A_{T2} = \frac{1}{2}(6)(12) = 36$

$A_{T3} = \frac{1}{2}(9)(12) = 54$

9 144
136 −99
+54 45
99



3.

$A_R = 9(6) = 54$

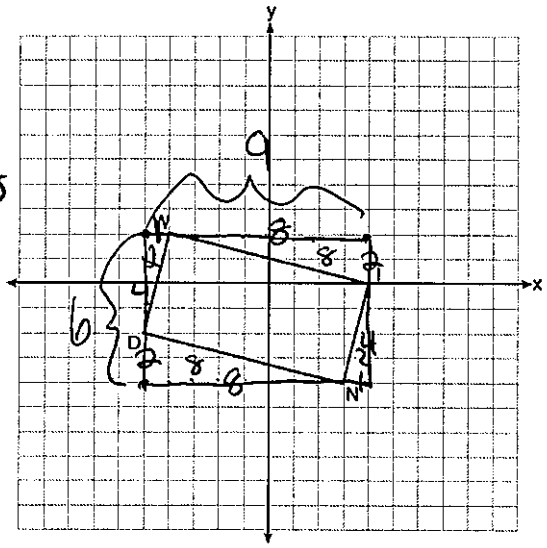
$A_{T1} = \frac{1}{2}(1)(4) = 2$

$A_{T2} = \frac{1}{2}(8)(2) = 8$

$A_{T3} = \frac{1}{2}(4)(1) = 2$

$A_{T4} = \frac{1}{2}(2)(8) = 8$

2 54
+8 −20
+2 34
+8
20



4.

$A_R = 6(8) = 48$

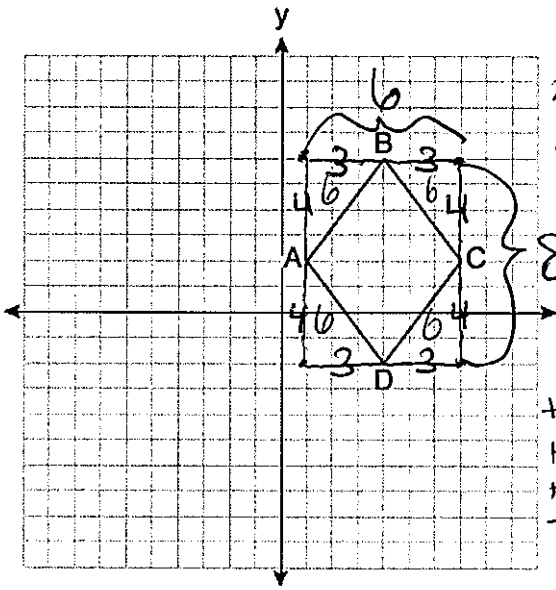
$A_{T1} = \frac{1}{2}(3)(4) = 6$

$A_{T2} = \frac{1}{2}(3)(4) = 6$

$A_{T3} = \frac{1}{2}(3)(4) = 6$

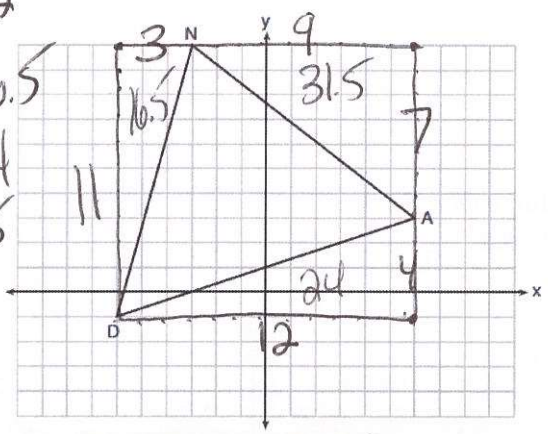
$A_{T4} = \frac{1}{2}(3)(4) = 6$

6 48
+6 −24
+6 24
+6
24



$A_e = 11(12) = 132$

5.



$A_{T1} = \frac{1}{2}(3)(11) = 16.5$

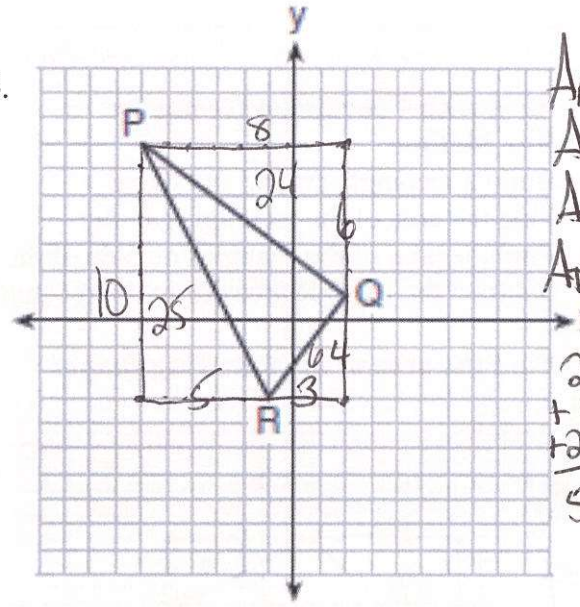
$A_{T2} = \frac{1}{2}(12)(4) = 24$

$A_{T3} = \frac{1}{2}(9)(7) = 31.5$

16.5
+31.5
+24
72

132
−72
60

6.



$A_e = 8(10) = 80$

$A_{T1} = \frac{1}{2}(8)(6) = 24$

$A_{T2} = \frac{1}{2}(4)(3) = 6$

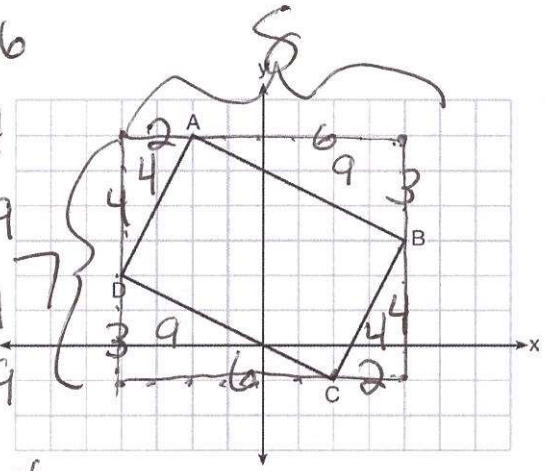
$A_{T3} = \frac{1}{2}(5)(5) = 25$

24
+6
+25
55

80
−55
25

$A_e = 8(7) = 56$

7.



$A_{T1} = \frac{1}{2}(2)(4) = 4$

$A_{T2} = \frac{1}{2}(6)(3) = 9$

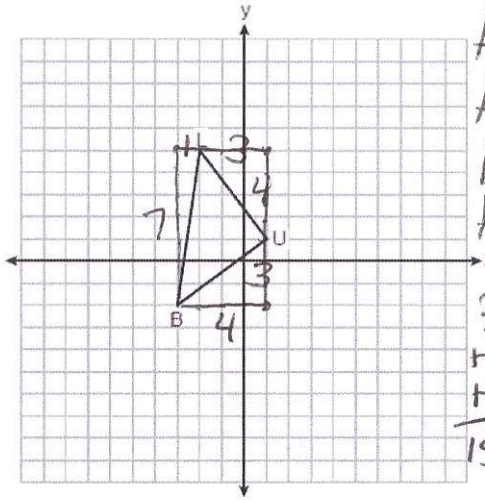
$A_{T3} = \frac{1}{2}(9)(2) = 4$

$A_{T4} = \frac{1}{2}(3)(6) = 9$

4
+9
+4
+9
26

56
−26
30

8.



$A_e = 7(4) = 28$

$A_{T1} = \frac{1}{2}(1)(7) = 3.5$

$A_{T2} = \frac{1}{2}(3)(4) = 6$

$A_{T3} = \frac{1}{2}(3)(4) = 6$

3.5
+6
+6
15.5

28
−15.5
12.5