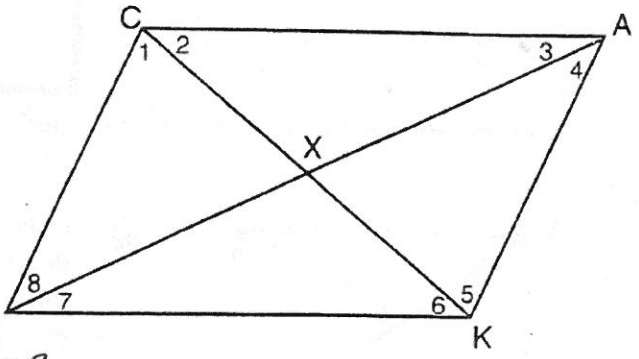
AK

Name:_____

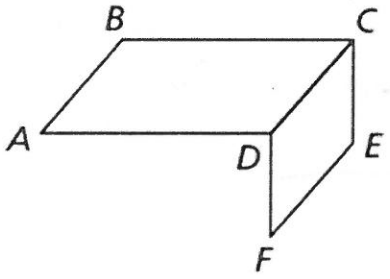
7.2 Practice Problems: Parallelograms

1. If CA = 10, EK = 10.
2. If CK = 18, CX = 9.
3. If ∠CEK = 85°, ∠CAK = 85°.
4. If ∠ECA = 130°, ∠CAK = 50°.
5. If ∠1 = 40° and ∠2 = 65°, ∠EKA = 105°.
6. If EX = 15, EA = 30.
7. If CE = 12, KA = 12.
8. If ∠8 = 25° and ∠7 = 35°, ∠EKA = 120°.
9. If CX = 5x – 44 and XK = 2x + 25, then x = 23.
10. If ∠7 = 30° and ∠4 = 40°, ∠EKA = 110°.
11. If CE = 3x + 5 and AK = 7x – 15, then x = 5.
12. If ∠ECA = 6x – 20 and ∠EKA = 2x + 80, then x = 25.
13. If ∠CAE = 35°, ∠AEK = 35°.
14. If ∠2 = 100° and ∠3 = 20°, ∠CXA = 60°.
15. If ∠CEK = 80°, ∠EKA = 100°.
16. ∠1 + ∠2 + ∠3 + ∠4 + ∠5 + ∠6 + ∠7 + ∠8 = 360°.



17. **Given** *ABCD* and *CEFD* are parallelograms.

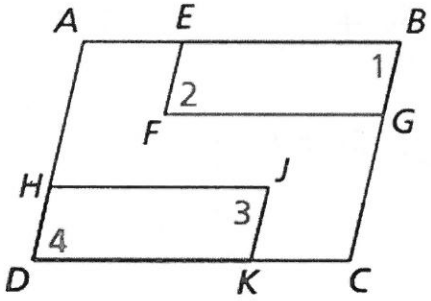
Prove $\overline{AB} \cong \overline{FE}$



S	R
ABCD & CEFD are Parallelograms	Given
$\overline{AB} \cong \overline{CD}$	Parallelogram Prop.
$\overline{CD} \cong \overline{EF}$	Parallelogram Prop.
$\overline{AB} \cong \overline{EF}$	Transitive Property

18. **Given** *ABCD*, *EBGF*, and *HJKD* are parallelograms.

Prove ∠2 ≅ ∠3

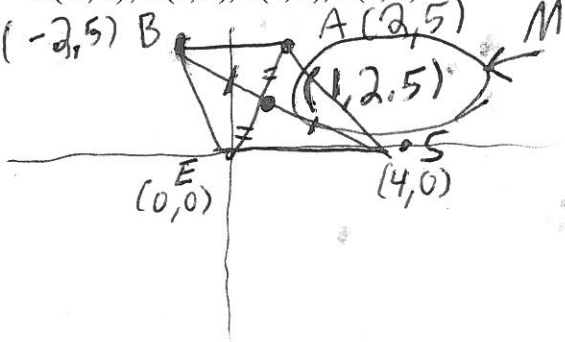


S	R
ABCD, EBGF & HJKD are p-grams	Given.
∠1 ≅ ∠2	Property of p-gram
∠3 ≅ ∠4	Property of p-gram
∠1 ≅ ∠4	Property of p-gram.
∠2 ≅ ∠3	Substitution.

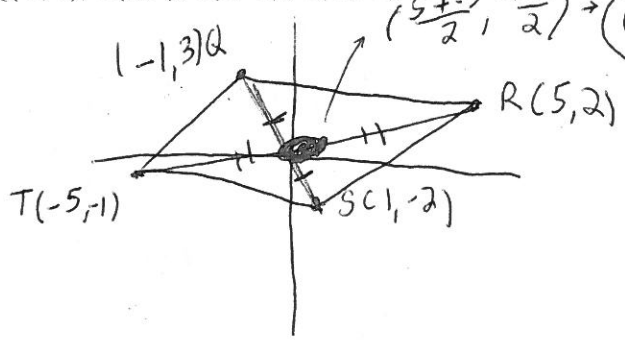
★ Diagonals bisect eachother → Intersect at midpoint

19. Find the coordinates of the intersection of the diagonals.

B(-2, 5), A(2, 5), S(4, 0), E(0, 0)

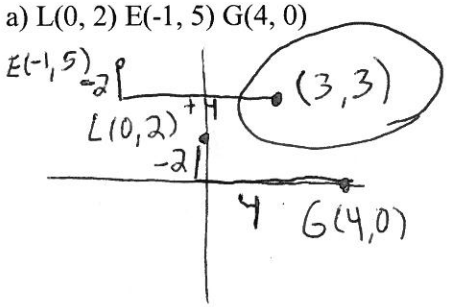


Q(-1, 3), R(5, 2), S(1, -2), T(-5, -1)



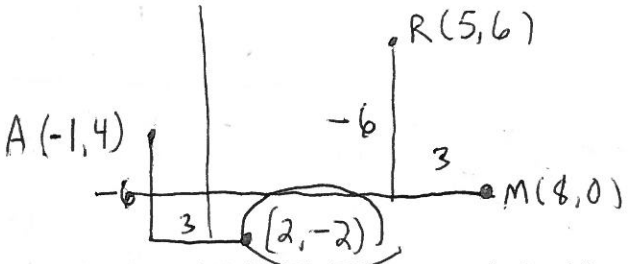
20. Find the coordinates of the remaining vertex.

a) L(0, 2) E(-1, 5) G(4, 0)

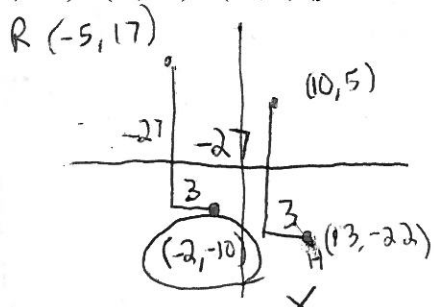


use slopes / distance.

b) A(-1, 4) R(5, 6) M(8, 0)



c) H(13, -22) R(-5, 17) D(10, 5) ~~(you can use decimals)~~



21) The measure of one interior angle of a parallelogram is 50 degrees more than 4 times the measure of another angle. Find the measure of each interior angle of the parallelogram.

$x = 50 + 4y$ (From Problem)

$x + y = 180$ (Since they are different angles in a parallelogram, they must be consecutive)

→ $50 + 4y + y = 180$

$50 + 5y = 180$

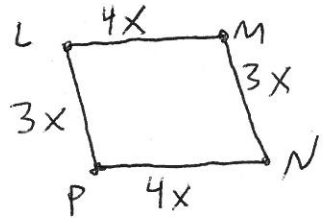
$5y = 130$

$y = 26$

$x + 26 = 180$

$x = 154$

22. In Parallelogram LMNP, the ratio of LM to MN is 4:3. Find LM when the perimeter of LMNP is 28.



$4x + 3x + 4x + 3x = 28$

$\frac{14x}{14} = \frac{28}{14}$

$x = 2$

$LM = 4x$

$= 4 \cdot 2$

$= 8$