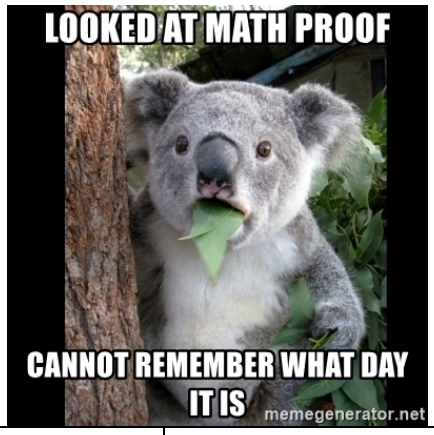
Name _____

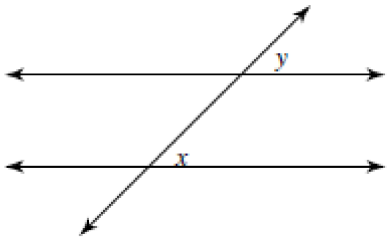
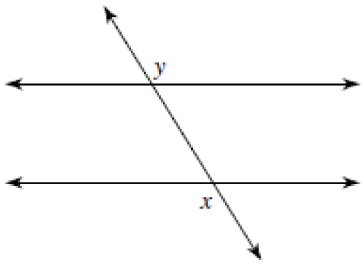
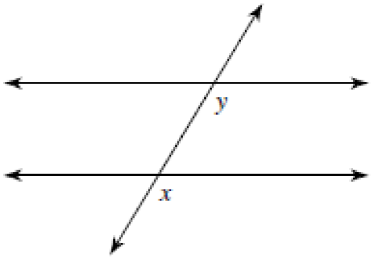
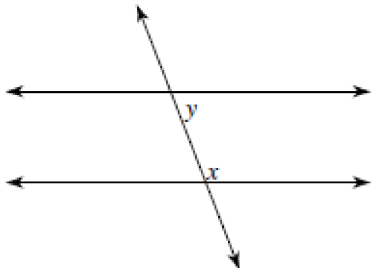
Math 3 Unit 5: Reasoning With Geometry



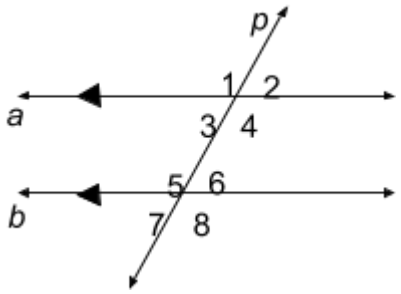
Monday	Tuesday	Wednesday	Thursday	Friday
				March 15 ● Geometric properties HW: 5.1
March 18 ● Triangle centers HW: 5.2	**March 19** ● Properties of parallelograms HW: 5.3	**March 20** ● Properties of rhombus, rectangle, and square HW: 5.4	**March 21** ● Properties of kites and trapezoids HW: 5.5	**March 22** ● Parallelogram proofs HW: 5.6
March 25 ● Review HW: finish review	**March 26** TEST!!!			

5.1 - Geometric Properties

Name each of the following types of angles. Then, state whether they are congruent or supplementary.

1) 	Name:	2) 	Name:
	Congruent or Supplementary		Congruent or Supplementary
3) 	Name:	4) 	Name:
	Congruent or Supplementary		Congruent or Supplementary

For # 5 − 10, a || b and p is a transversal. Fill in the blanks describing the angle relationships with regard to ∠3.



5. ∠3 and ∠_____ are a linear pair

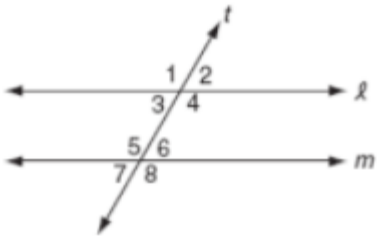
6. ∠3 and ∠_____ are vertical angles

7. ∠3 and ∠_____ are corresponding angles

8. ∠3 and ∠_____ are alternate interior angles

9. ∠3 and ∠_____ are consecutive interior angles

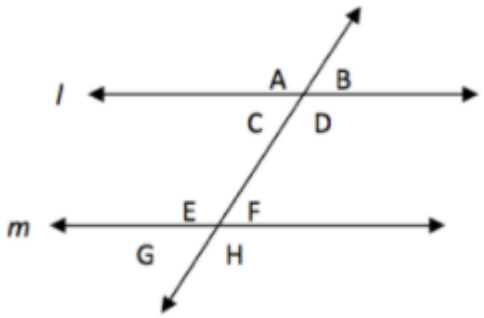
10. **Multiple Choice:** In the accompanying diagram, line ℓ is parallel to line *m*, and line *t* is a transversal. Which must be a true statement?



A m∠1 + m∠4 = 180 B m∠3 + m∠6 = 180
C m∠1 + m∠8 = 180 D m∠2 + m∠5 = 180

KEEP GOING -->

For #11 − 14, find the value of x in each question given that lines l and m are parallel. Then find the measure of each angle.



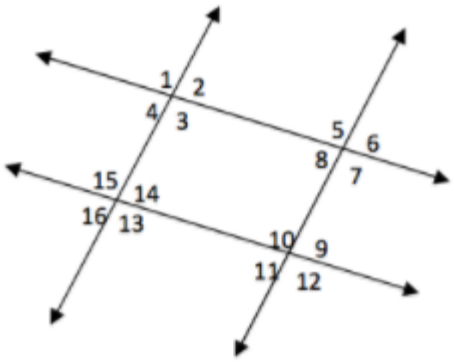
11. $m\angle C = 3x - 10$
    $m\angle F = x + 70$

12. $m\angle D = x + 27$
    $m\angle F = 2x - 39$

13. $m\angle B = 2(x + 40)$
    $m\angle G = 5x + 44$

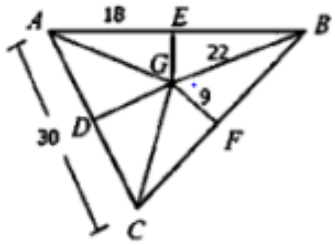
14. $m\angle E = 7x + 30$
    $m\angle G = 3x + 10$

15. Given that $m\angle 4 = 3x + 10$ and $m\angle 12 = 2x + 30$, find the value of x, $m\angle 4$, and $m\angle 10$.



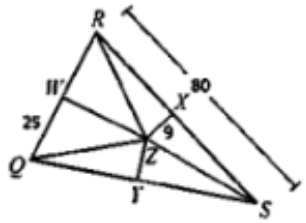
5.2 - Triangle Centers

1. If G is the circumcenter of ΔABC, find each missing measure.



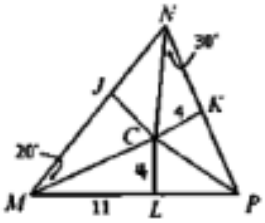
a) AD = _____
b) FC = _____
c) EB = _____
d) AG = _____
e) EG = _____

2. If Z is the circumcenter of ΔQRS, find each missing measure.



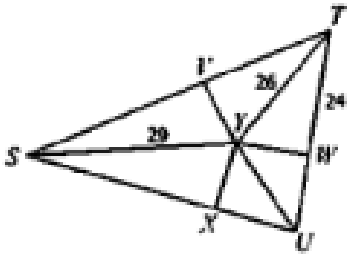
a) QR = _____
b) RZ = _____
c) XS = _____
d) ZS = _____
e) WZ = _____

3. If C is the incenter of ΔMNP, find each missing measure.



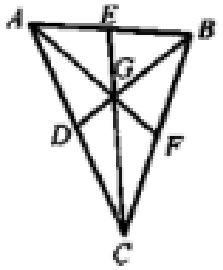
a) m∠CML = _____
b) m∠MNP = _____
c) m∠NPC = _____
d) JC = _____
e) MC = _____

4. If Y is the incenter of ΔSTU, find each missing measure.



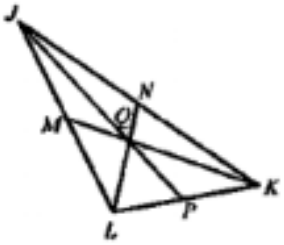
a) VT = _____
b) YW = _____
c) SX = _____
d) YX = _____
e) SV = _____

5. If G is the centroid of ΔACE, AG = 26, BC = 44, and DG = 12, find each missing measure.



a) GF = _____
b) AF = _____
c) PC = _____
d) GB = _____
e) DB = _____

6. If Q is the centroid of ΔJKL, LN = 72, JP=93, and MK = 78, find each missing measure.

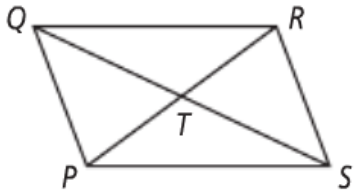


a) LQ = _____
b) QN = _____
c) QP = _____
d) JQ = _____
e) Qk = _____

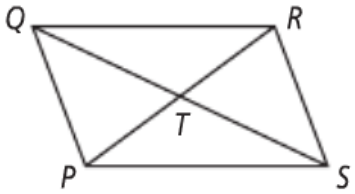
5.3 - Properties of Parallelograms

For #1 −2, use the diagram to solve for x and y if the figure is a parallelogram.

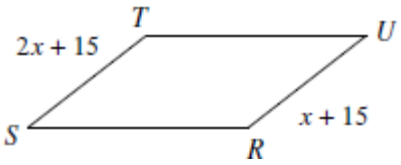
1. PT $= 2x$, QT $= y + 12$, TR $= x + 2$, TS $= 7y$



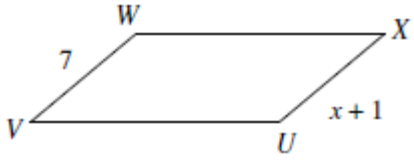
2. PQ $= y$, RS $= 4y - 15$, QR $= x + 6$, PS $= 4x - 6$



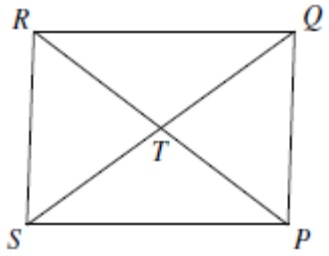
3. Solve for x.



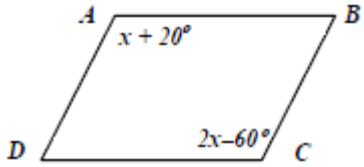
4. Solve for x.



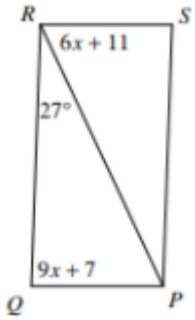
5. Solve for x.



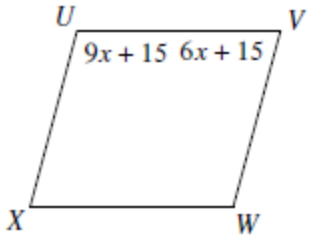
6. Solve for x.
$RP = 48$ and $RT = 3x - 5$



7. Solve for x.



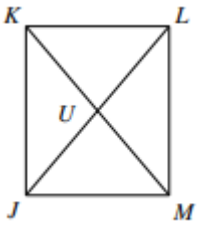
8. Find the measure of ∠XUV.

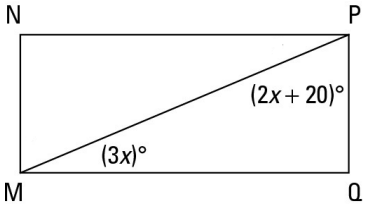


5.4 - Properties of Rectangles, Rhombuses, and Squares

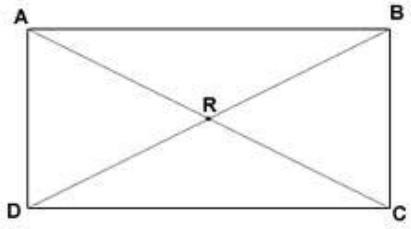
For questions #1 − 4, find x given that each figure is a rectangle.

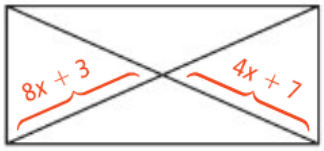
1. KM $= 5x - 2$ and JL $= 2x + 16$



2. 

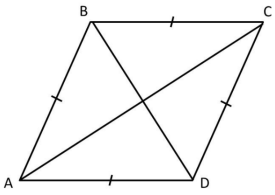
3. AC = 38, DR = 2x, and BR=4x +2



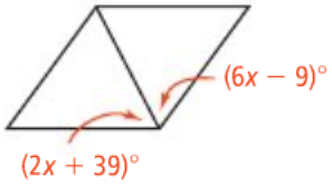
4. 

For questions #4 − 8, each figure is a rhombus.

5. Find the measure of ∠ABD and ∠ACD given ∠DBC = 44 and ∠ACB = 46



6. Solve for x.



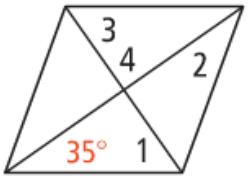
For #7 −10, use the figure to the right.

7. Find the m∠1.

8. Find the m∠2.

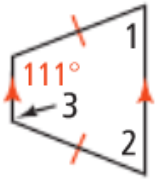
9. Find the m∠3.

10. Find the m∠4.



5.5 - Properties of Kites and Trapezoids

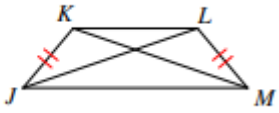
1. Find m∠1, m∠2, m∠3.



2. Find m∠1, m∠2, m∠3.

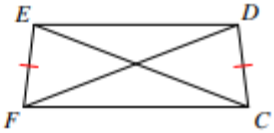
3. Find JL.

$KM = 22$
Find JL

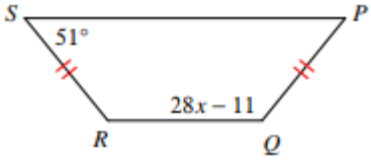


4. Solve for x.

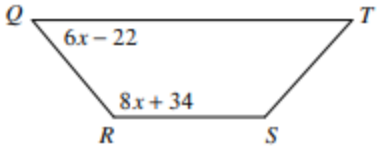
$EC = 20$
$FD = 5x - 10$



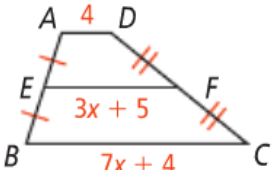
5. Solve for x.



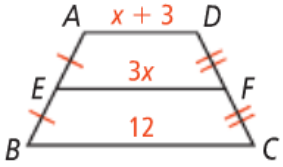
6. Find m∠R.



7. Find x and length of EF.

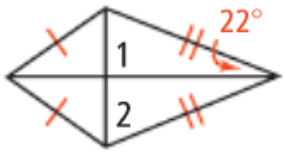


8. Find the length of EF.

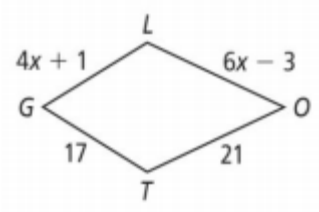


9. Find m∠1, m∠2.

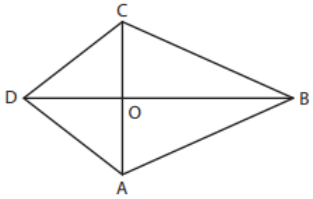
10. Find m∠1, m∠2.



11. Solve for x.

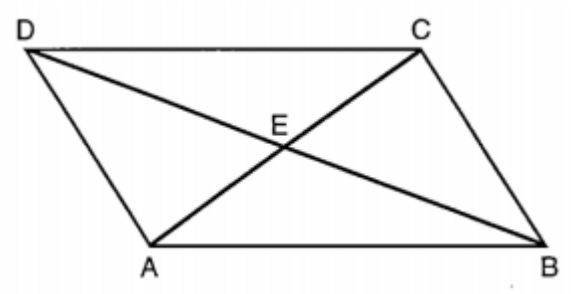


12. CO = 8, OD = 6. Find CD.



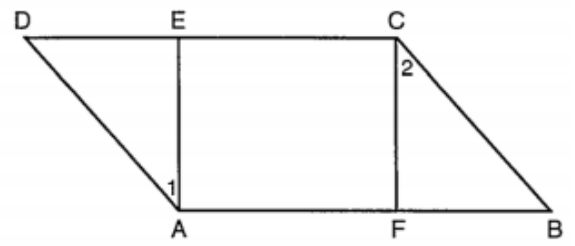
5.6 - Proofs with Parallelograms

1. Given: ABCD is a parallelogram
   Prove: △AEB ≅ △CED



Statement:	Reason:
1. Parallelogram ABCD	1. Given
2. $\overline{AB}$ ≅ _____	2.
3. $\overline{AB}$ || _____	3.
4. ∠CAB ≅ _____	4. Alternate Interior Angles
5. ∠AEB ≅ ∠CED	5.
6. △AEB ≅ △CED	6.

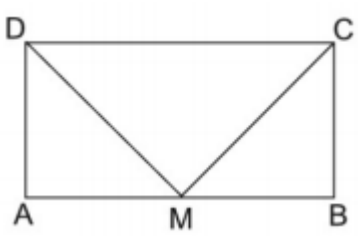
2. Given: ABCD is a parallelogram, $\overline{DE} \cong \overline{FB}$
   Prove: ∠1 ≅ ∠2



Statement:	Reason:
1. Parallelogram ABCD	1. Given
2. $\overline{DE} \cong \overline{FB}$	2. Given
3. $\overline{AD}$ ≅ _____	3.
4. ∠D ≅ _____	4.
5.	5. SAS
6. ∠1 ≅ ∠2	6.

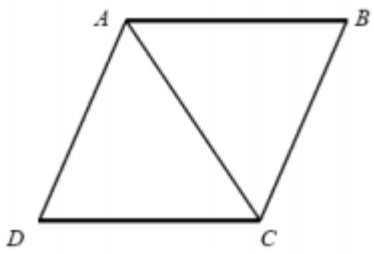
KEEP GOING -->

3. Given: ABCD is a rectangle, M is the midpoint of $\overline{AB}$
   Prove: $\overline{DM} \cong \overline{CM}$



Statement:	Reason:
1. Rectangle ABCD	1. Given
2. M is the midpoint of $\overline{AB}$	2. Given
3. $\overline{AM} \cong$ _____	3.
4. $\overline{DA} \cong$ _____	4.
5. ∠A = _____ = 90°	5.
6.	6. SAS
7. $\overline{DM} \cong \overline{CM}$	7.

4. Given: ABCD is a parallelogram
   Prove: △DAC ≅ △BCA



Statement:	Reason:
1. Parallelogram ABCD	1. Given
2. ∠D ≅ _____	2.
3. ∠BAC ≅ _____	3.
4.	4. Reflexive Property
5. △DAC ≅ △BCA	5.