MATH 2201
PROPERTIES OF ANGLES AND TRIANGLES
TEST REVIEW SHEET

MULTIPLE CHOICE

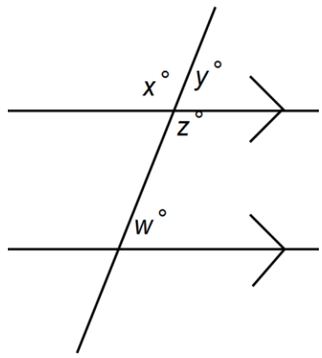
1. What is the relationship between $\angle w$ and $\angle y$? 1.____

(A) Alternate Interior Angles

(B) Corresponding Angles

(C)Same Side Interior Angles

(D) Vertically Opposite Angles



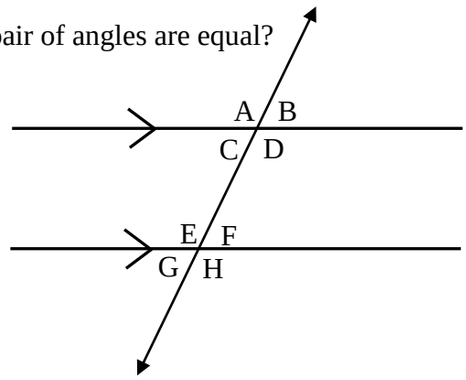
2. Given two parallel lines and a transversal, which pair of angles are equal? 2.____

(A) $\angle A = \angle C, \angle B = \angle D$

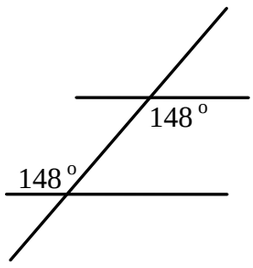
(B) $\angle A = \angle E, \angle D = \angle H$

(C) $\angle C = \angle E, \angle D = \angle F$

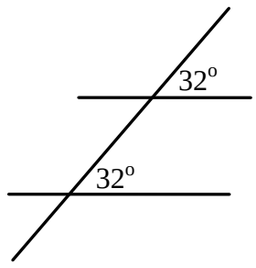
(D) $\angle C = \angle D, \angle G = \angle H$



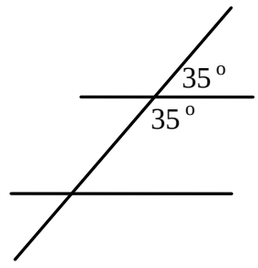
3. Which figure illustrates that the two lines are **NOT** parallel given the two angle measures? 3.____



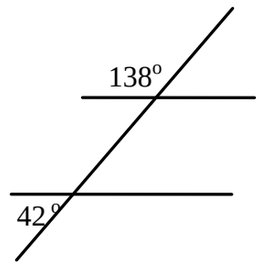
(A) Figure 1



(B) Figure 2



(C) Figure 3



(D) Figure 4

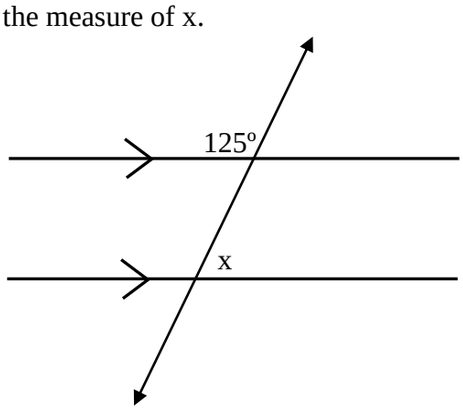
4. Given the two parallel lines, determine the measure of x. 4.____

(A) x = 125°

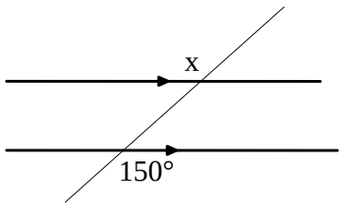
(B) x = 135°

(C) x = 45°

(D) x = 55°

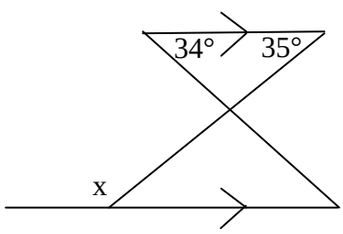


5. Given the two parallel lines, determine the value of x. 5.____



(A) 30^o (B) 50^o (C) 130^o (D) 150^o

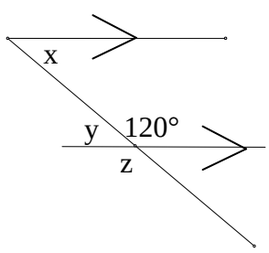
6. Determine the value of x. 6.____



(A) 34° (B) 146°

(C) 35°(D) 145°

7. What are the correct measures of the indicated measures? 7.____



(A) $\angle x = 60°$, $\angle y = 60°$, $\angle z = 120°$

(B) $\angle x = 60°$, $\angle y = 120°$, $\angle z = 60°$

(C) $\angle x = 120°$, $\angle y = 120°$, $\angle z = 60°$

(D) $\angle x = 120°$, $\angle y = 60°$, $\angle z = 120°$

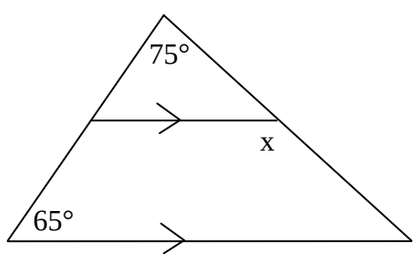
8. Determine the measure of x. 8.____

(A) $x = 40^o$

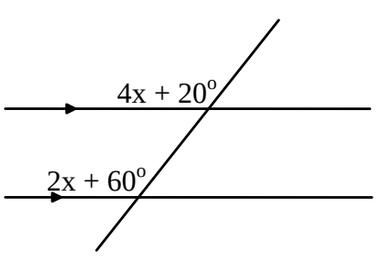
(B) $x = 140^o$

(C) $x = 105^o$

(D) $x = 75^o$

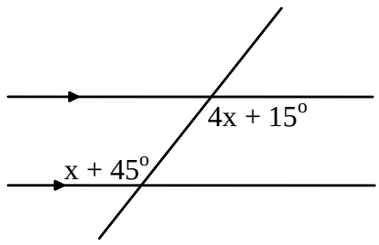


9. Determine the value of x. 9.____



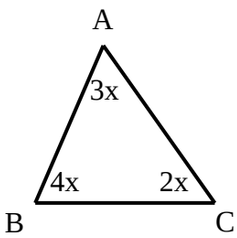
(A) x = 10° (B) x = 20° (C) x = 30° (D) x = 40°

10. Determine the value of x. 10.____



(A) x = 5° (B) x = 15° (C) x = 10° (D) x = 30°

11. Determine the measure of ∠A. 11.____



(A) 80° (B) 60°

(C) 40° (D) 20°

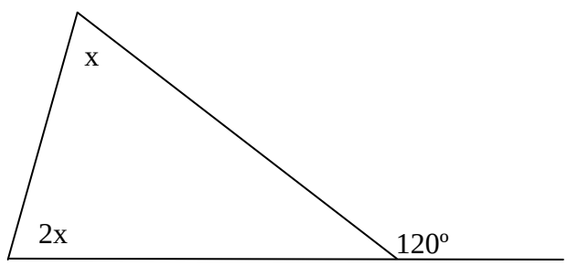
12. Determine the value of x. 12.____

(A) x = 10°

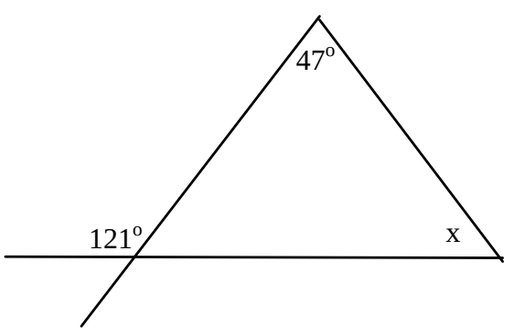
(B) x = 20°

(C) x = 40°

(D) x = 60°



13. Which represents the value of x? 13.____



(A)74°(B) 64°(C) 121°(D) 59°

14. What is the sum of the measures of all the angles in a regular decagon (ten sided figure)? 14.____

(A) 1800° (B) 144° (C) 180° (D) 1440°

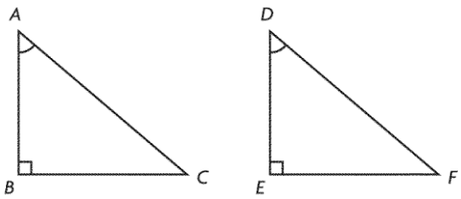
15. What is the measure of one interior angle in a regular hexagon (six sided figure)? 15._

(A) 1080° (B) 720° (C) 180° (D) 120°

16. How many sides are there in a convex polygon that has the sum of all its interior angles equal to 1260°? 16.____

(A) 10 sides (B) 9 sides (C) 8 sides (D) 7 sides

17. Which additional piece of information would allow you to conclude that these triangles are congruent? 17._____



(A) AC = DF (B) $\angle C = \angle F$ (C) AB = EF (D) BC = EF

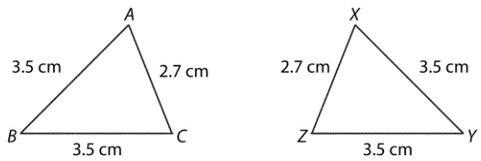
18. What can you deduce from the congruence statement $\Delta ABC \cong \Delta DEF$? 18._____

(A) AB = EF (B) AC = EF (C) BC = DE (D) AC = DF

19. What can you deduce from the congruence statement $\Delta ABC \cong \Delta PQR$? 19._____

(A) $\angle A = \angle R$ (B) $\angle B = \angle P$ (C) $\angle C = \angle R$ (D) $\angle C = \angle Q$

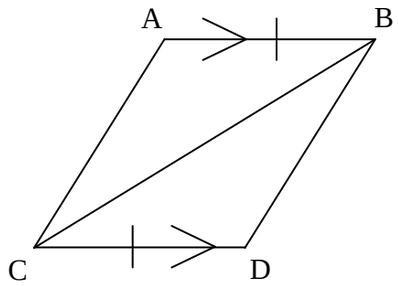
20. Which congruence postulate shows that $\Delta ABC \cong \Delta XYZ$? 20.____



(A) Side – Side – Side Postulate (B) Angle – Side – Angle Postulate

(C) Angle – Angle – Side Postulate (D) Side – Angle – Side Postulate

21. Which piece of information is required to prove that $\Delta ABC \cong \Delta DCB$ using the SAS postulate ? 21.____



(A) $\overline{AB} = \overline{DC}$

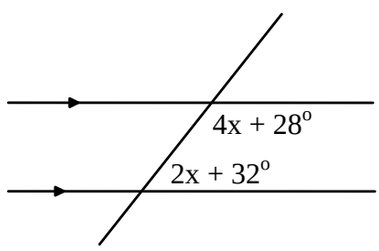
(B) $\overline{BC} = \overline{CB}$

(C) $\overline{AC} = \overline{DB}$

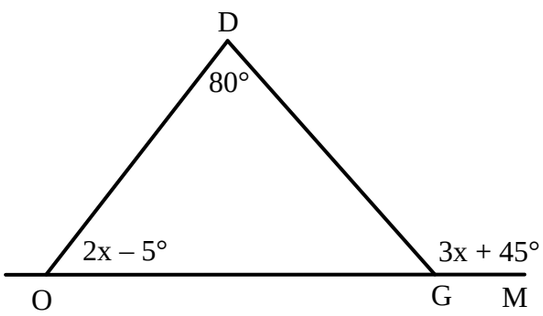
(D) $\overline{AB} = \overline{DB}$

QUESTIONS

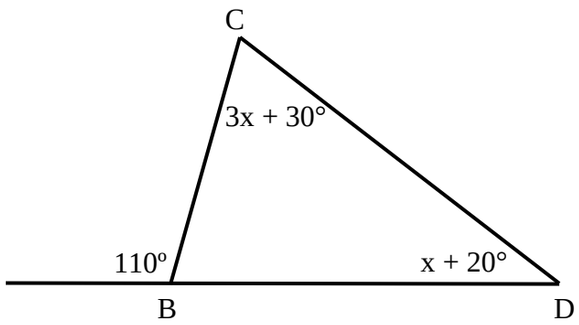
22.Determine the value of x.



23. Determine the value of x **AND** then determine the measures of both ∠DOG and ∠DGM.

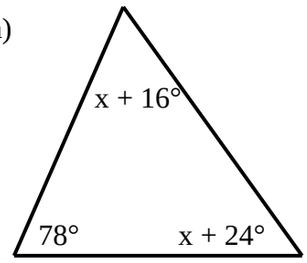


24.Determine the value of x and the measures of ∠ BCD and ∠ CDB.

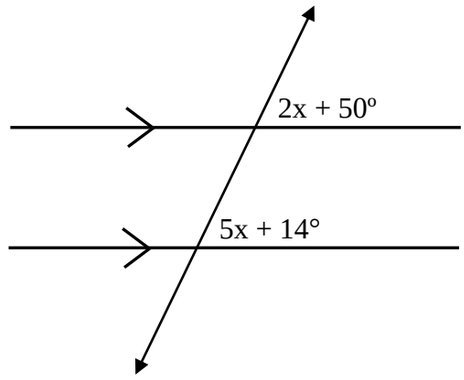


25. Determine the value of x for each of the following diagrams.

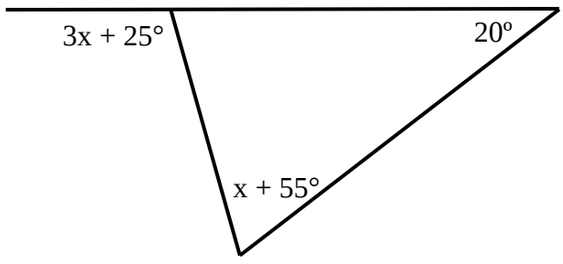
(a)



(b)

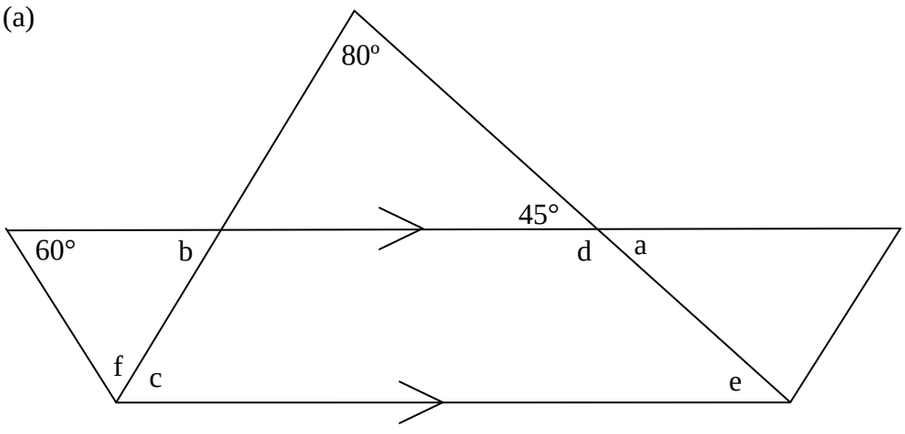


(c)



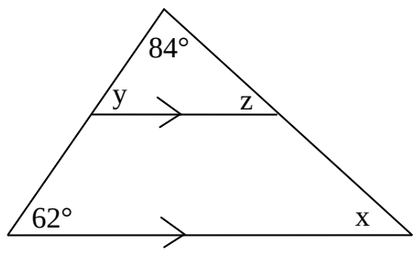
26. Determine the measure of the missing variables for the following diagram.

(a)

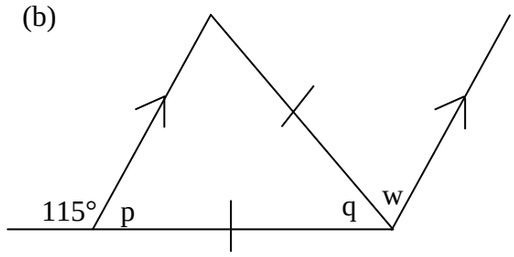


27. Determine the measures of the missing variables for the following diagrams.

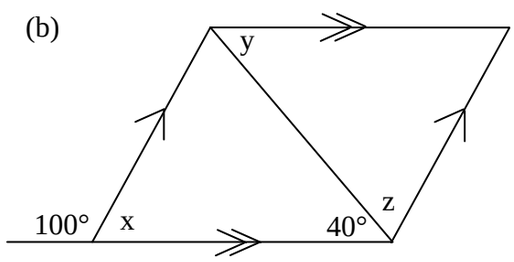
(a)



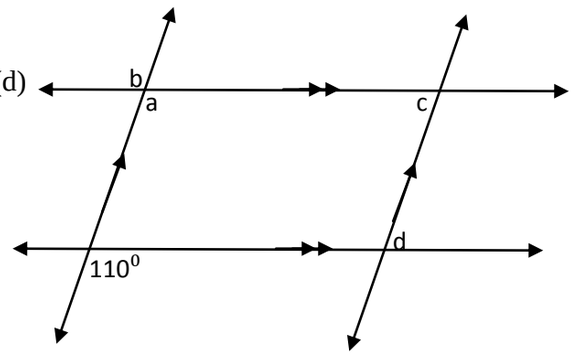
(b)



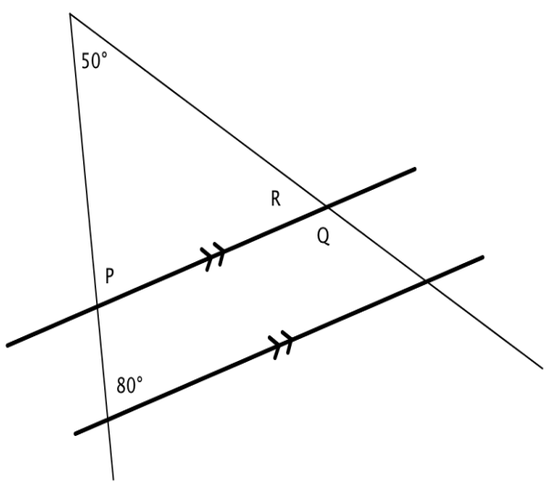
(b)



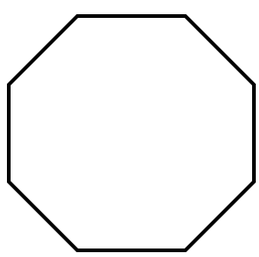
(d)



(e)



28(a) Determine the measure of one interior angle in the regular octagon below.

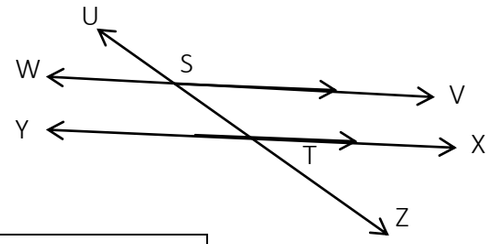


(b) The sum of the measures of the interior angles of an unknown polygon is 1980^{o}. Determine the number of sides of this polygon.

(c)The sum of the measures of all the interior angles of an unknown polygon is 1620^{o}. Determine the number of sides in the unknown polygon.

29. Complete the following proof.

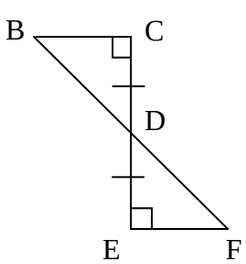
Given: WV || YX
Prove: ∠USV = ∠STX



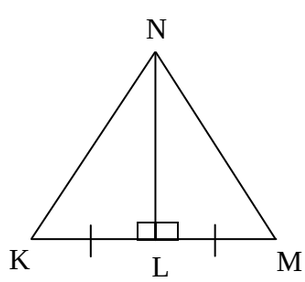
Statement	Reason
WV || YX	
∠WST = ∠USV	
∠WST = ∠STX	
∠USV = ∠STX	

30. Name the congruence postulate (SSS, SAS, ASA, or AAS) and give the congruence statement for the triangles.

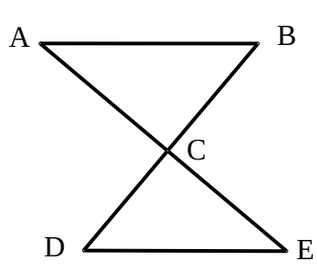
(a)



(b)



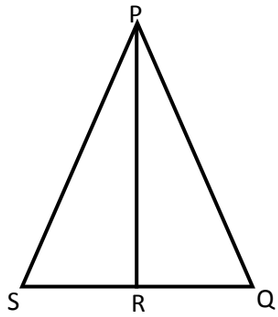
31.Given: AB ∥ DE
AC = CE
Prove: $\Delta ABC \cong \Delta EDC$



STATEMENT	REASON
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

32. Given: PR $\perp$ SQ
RS = RQ

Prove: $\angle S = \angle Q$



STATEMENT	REASON
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.

SOLUTIONS

1. B 2. B3. C 4. D5. D 6. D 7. A 8. B 9. B 10. C 11. B 12. C 13. A 14. D

15. D 16. B 17. D 18. D 19. C 20. A 21. B

22. x = 20 23. x = 30, ∠DOG = 55°, ∠DGM = 135° 24. x = 15, ∠BCD = 75°, ∠CDB = 35°

25(a) x = 31 (b) x = 12 (c) x = 25 26. a = 45°, b = 55°, c = 55°, d = 135°, e = 45°, f = 65°

27(a) x = 34°, y = 62°, z = 34° (b) p = 65°, q = 50°, w = 65° (c) x = 80°, y = 40°, z = 60°

27(d) a = 110°, b = 110°, c = 70°, d = 70° (e) p = 80°, q = 130°, r = 50°

28(a) sum = 135° (b) n = 13 sides (c) n = 11 sides

29.

Statement	**Reason**
WV ‖ YX	Given
∠WST = ∠USV	Vertically Opposite Angles (X)
∠WST = ∠STX	Alternate Interior Angles (Z)
∠USV = ∠STX	Transitive Property

30(a) ASA postulate, Δ BCD≅Δ FED (b) SAS postulate, Δ NLK≅Δ NLM

31.

STATEMENT	**REASON**
1. AB ‖ DE	1. Given
2. AC = CE	2. Given
3. ∠ ABC = ∠ EDC	3. Alternate Interior Angles (Z)
4. ∠ACB = ∠ECD	4. Vertically Opposite Angles (X)
5. Δ *ABC*≅Δ *EDC*	5. AAS

32.

STATEMENT	**REASON**
1. PR ⊥ SQ	1. Given
2. ∠ SRP = ∠ QRP	2. Both angles equal 90°
3. RS = RQ	3. Given
4. PR = PR	4. Same Side
5. Δ *SRP*≅Δ *QRP*	5. SAS
6.∠S = ∠Q	6. Definition of Congruent Triangles