Final Exam Review
Ch. 1-5

Henry Ford Early College
H. Geometry: Unit 1 Review
Unit 1: Vocabulary Essentials and Angle Relationships
Chapter 1: Sections 1.3-1.6, 1.8

Directions: Match the following terms with their precise definitions.

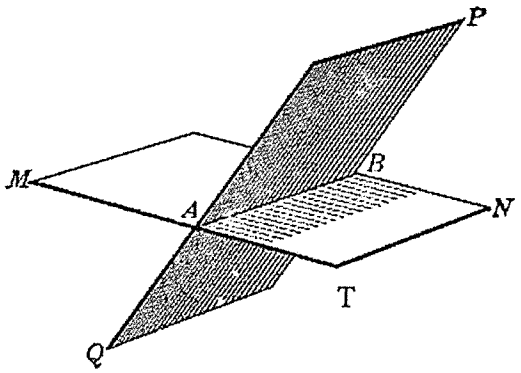
1. B line segment	A. Lines that are coplanar and do not intersect.
2. D perpendicular lines	B. Part of a line consisting of 2 endpoints.
3. A parallel lines	C. Formed by 2 rays with the same endpoint.
4. C angle	D. 2 Lines that intersect at a 90 angle.

Directions: Identify the following from the diagram.

5) 3 Collinear points M, A, T

6) 3 coplanar points A, B, N

7) a plane QTNB



Directions: Identify the following from the diagram. Make sure you have the appropriate geometric markings.

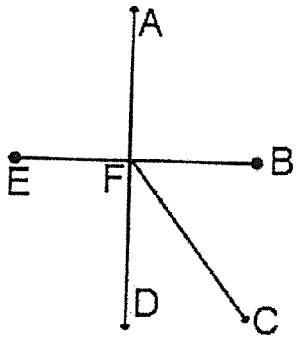
8) Line $\overline{AD}$

9) Segment $\overline{EB}$

10) Ray $\overrightarrow{FC}$

11) Angle $\angle DFB$

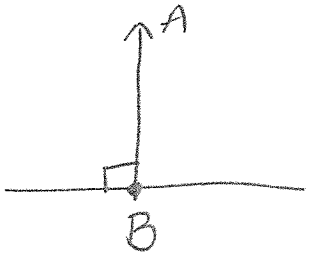
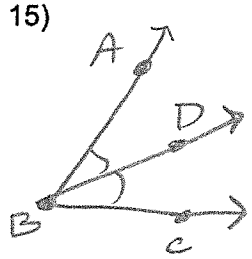
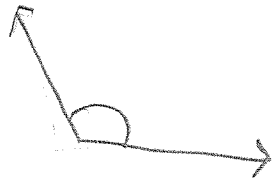
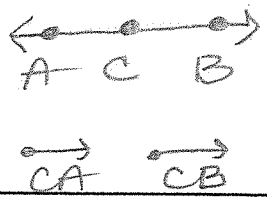
12) Opposite rays $\overrightarrow{FE}$ $\overrightarrow{FB}$



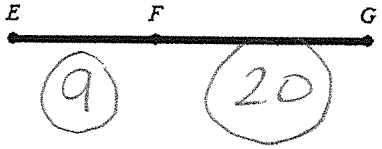
13.) Find the distance between points $P(8, 2)$ and $Q(3, 8)$ to the nearest tenth.

7.8

Directions: Draw and label the following correctly.

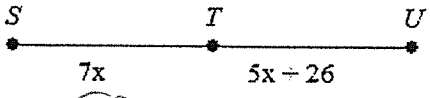
Perpendicular Bisector 14) 	**Angle Bisector** 15) 	**Obtuse Angle** 16) 
Acute Angle 17) 	**Point** 18) 	**Opposite Rays** 19) 

20.) If $EF = 2x - 5$, $FG = 4x - 8$, and $EG = 29$, find the values of x, EF, and FG. The drawing is not to scale.



$X = 7$

21.) If T is the midpoint of SU, find the values of x and ST. The diagram is not to scale.



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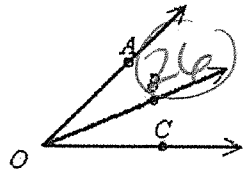
$X = 13$

22.) $M(3, 3)$ is the midpoint of $\overline{RS}$. The coordinates of S are $(4, 4)$. What are the coordinates of R?

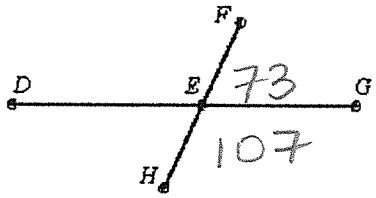
a. $(6, 6)$ b. $(2, 2)$ c. $(3.5, 3.5)$ d. $(5, 5)$

23.) If $m\angle BOC = 36$ and $m\angle AOC = 62$, then what is the measure of $\angle AOB$? The diagram is not to scale.

26



24.) If $m\angle DEF = 107$, then what are $m\angle FEG$ and $m\angle HEG$? The diagram is not to scale.



25.) $\overrightarrow{MO}$ bisects $\angle LMN$, $m\angle LMO = 8x - 22$, and $m\angle NMO = 2x + 38$. Solve for x and find $m\angle LMN$. The diagram is not to scale.

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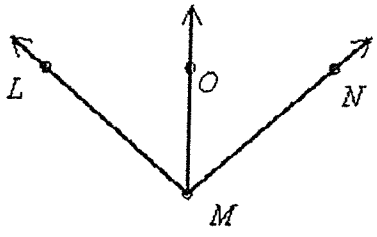
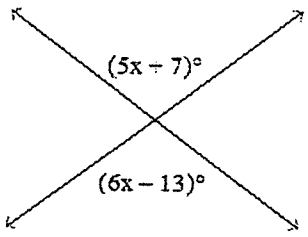


X=10

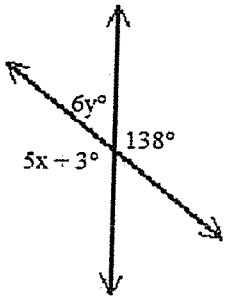
26.) Find the value of x.



Drawing not to scale

X=20

27.) Find the values of x and y.

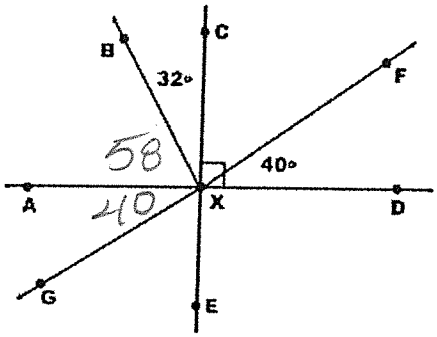


Drawing not to scale

$x = 27$

$y = 7$

Use the diagram below for questions 28 – 33.



28. Name a right angle. ∠CXD

29. Name a pair of complementary angles. ∠CXF and ∠FXD

30. Name a pair of vertical angles. ∠EXG and ∠CXF

31. Name a pair of supplementary angles. ∠AXG and ∠DXG

32. Name a straight angle. ∠AXD

33. Find the measure of the angles below:

$m\angle AXB =$ 58

$m\angle CXF =$ 50

$m\angle AXG =$ 40

$m\angle EXD =$ 90

$m\angle BXG =$ 98

$m\angle BXF =$ 82

Geometry Chapter 2 Review ANSWERS

1. Reasons:
1. Given
2. Simplify/combine like terms.
3. Subtraction Property of Equality
4. Simplify
5. Division Property of Equality
6. Simplify

2. Write down **ALL** of the steps it takes to solve the given equation for x. Give a reason for each of the steps.
Given: $9x + 3(x - 4) + 2 = 74$

STEPS	REASONS
1. $9x + 3(x - 4) + 2 = 74$	1. Given
2. $9x + 3x - 12 + 2 = 74$	2. Distributive Property
3. $12x - 10 = 74$	3. Simplify/Combine like terms
4. $12x - 10 + 10 = 74 + 10$	4. Addition Prop of Eq.
5. $12x = 84$	5. Simplify
6. $\frac{12x}{12} = \frac{84}{12}$	6. Division Property of Eq.
7. $x = 7$	7. Simplify

3. Reasons:
1. Angle Addition Postulate
2. Substitution
3. Subtraction Property of Equality

4. Reasons:
1. Given
2. Definition of Midpoint
3. Substitution
4. Subtraction Prop of Eq.
5. Division Prop of Eq.
6. Symmetric Prop of Eq.

5. Reasons:
1. Segment Additoin Postulate
2. Substitution
3. Simplify/Combine Like Terms
4. Subtraction Prop of Eq.
5. Division Prop of Eq.

6. Reasons:
1. Angle Add Post or Def of Suppl.
2. Substitution
3. Simplify/Combine like terms
4. Subtraction Prop of Eq.
5. Division Prop of Eq.

7.
a. $9x = 54$
b. $x = 40$
c. $\angle ABC \cong \angle ABC$
d. $MC = GV$
e. $\angle EXQ \cong \angle CAD$
f. $AB + 12 = AQ$

8. $x = 12 \quad y = 48$

9. a) Hypothesis: I go to sleep b) Conclusion: I'll have a dream

10. a) If the plant is a flower, then it has petals.
b) If the animal is a fish, then it has gills.h has gills

11. a) True b) If the product of two number is even, then there was an odd number and an even number.
c) This converse is false because if the product is even, then the two numbers could both be even.

12. If it is snowing, then it is cold.

13. a) If the animal is a cat, then it has whiskers.
If the animal has has whiskers, then it is a cat.
b) No, the second conditional is false because the animal could be a mouse.
c) No, the biconditional would only be true if both conditionals are true.

For 14 and 15 do the following:
a) Write the converse.
b) Is the converse true? If no, give a counterexample. If yes, write the original conditional and its converse as a biconditional.

14. a) Converse: If a quadrilateral has four equal sides, then it is a Rhombus.
b) True: Since a square is also a rhombus any four sides figure with equal sides is called a rhombus.
Biconditional: A quadrilateral is a Rhombus if and only if it has four congruent sides.

15. a) Converse: If the sum of two numbers is odd, then you added an even with an odd.
b) False, both numbers could be odd and still get an odd sum.

Geometry Review Chapter 3 Answers

1. Corresponding $\angle$'s, $\cong$ 2. Alt. Int. $\angle$'s, $\cong$ 3. No Name, suppl 4. Same-Side Ext $\angle$'s, suppl
5. No name, $\cong$ 6. Same-Side Int$\angle$'s, suppl

For 7 to 10 many different proofs are possible only one example is given.

7.

Statement	Reason
1. $a \parallel b, c \parallel d$	1. Given
2. $\angle 1 \cong \angle 3$	2. Corresp $\angle$'s are $\cong$
3. $\angle 1 \cong \angle 4$	3. Corresp $\angle$'s are $\cong$
4. $\angle 3 \cong \angle 4$	4. Substitution

8.

Statement	Reason
1. $a \parallel b, c \parallel d$	1. Given
2. $\angle 15$ suppl to $\angle 12$	2. SSE $\angle$'s are suppl
3. $\angle 12 \cong \angle 16$	3. Corresp $\angle$'s are $\cong$
4. $\angle 15$ suppl to $\angle 16$	4. Substitution

9.

Statement	Reason
1. $c \parallel d$, $\angle 8 \cong \angle 7$	1. Given
2. $\angle 11 \cong \angle 7$	2. Alt. Ext. $\angle$'s are $\cong$
3. $\angle 11 \cong \angle 8$	3. Substitution
4. $a \parallel b$	4. b/c Corresp $\angle$'s are $\cong$

10.

Statement	Reason
1. $a \parallel b$, $\angle 1$ suppl to $\angle 11$	1. Given
2. $\angle 11 \cong \angle 14$	2. Alt. Int. $\angle$'s are $\cong$
3. $\angle 1$ suppl to$\angle 14$	3. Substitution
4. $c \parallel d$	4. b/c SSI $\angle$'s are suppl

11. a. No enough Information b. $c \parallel d$, Corresp $\angle$'s are $\cong$ c. $a \parallel b$, Alt. Ext. $\angle$'s are $\cong$
d. Not enough Information e. $c \parallel d$, Alt. Int. $\angle$'s are $\cong$ f. $c \parallel d$, SSE $\angle$'s are suppl
g. Not enough Informtation h. $c \parallel d$, SSI $\angle$'s are suppl

12. $\angle$'s $2,3,5 = 72°$ $\angle$'s $1,4,6,7 = 108°$ 13. No, Alt Ext $\angle$'s are not $\cong$
14. No, SSE $\angle$'s are not suppl. 15. Yes, using vertical angles with $140°$ angle SSI are suppl.
16. Yes, Alt Int. $\angle$'s $\cong$ 17. Using Alt. Ext $\angle$'s: $3x + 40 = x + 70 \rightarrow x = 15$
18. a. $c \parallel d$, transversal b, Corresp $\angle$'s b. $a \parallel b$, transversal m, Corresp $\angle$'s
c. $c \parallel d$, transversal a, Alt. Int. $\angle$'s d. $a \parallel b$, transversal d, SSI $\angle$'s

19. $112°$ 20. $47°$ 21. Right Scalene $\triangle$ 22. Isosceles Obtuse $\triangle$
23. Acute Scalene $\triangle$ 24. Equilateral Equiangular $\triangle$ 25. $1440°$ 26. $156°$
27. 33 sides 28. 40 sides 29. $45°$ 30. 12 sides
31. No, the number of sides must be a whole number greater than 2.

32. Yes, you would get 72 for the number of sides and this is possible.

33. $x = 20$ 34. $a = 80°, b = 20°, c = 48°$

Geometry Chapter 4 Review ANSWERS

1. Yes, $\triangle AQC \cong \triangle GWC$ by either ASA or AAS
2. Yes, $\triangle MKG \cong \triangle MKR$ by HL
3. Yes, $\triangle KNB \cong \triangle PBN$ by ASA
4. Yes, $\triangle RKC \cong \triangle LKT$ by SAS
5. Yes, $\triangle DEQ \cong \triangle QYD$ by SSS
6. Yes, $\triangle GUM \cong \triangle HUM$ by SAS

7.

Statement	Reason
1. $\overline{DB}$ bisects $\angle ABC$ and $\overline{AB} \cong \overline{CB}$	1. Given
2. $\angle ABD \cong \angle CBD$	2. Def of Angle Bisector
3. $\overline{BD} \cong \overline{BD}$	3. Reflexive Property
4. $\triangle ABD \cong \triangle CBD$	4. SAS

8. $x = 39$
9. $x = 54$
10. $m\angle 1 = 70°, m\angle 2 = 20°, m\angle 3 = 90°, m\angle 4 = 20°$

11.

Statement	Reason
1. $\overline{TC}$ bisects $\angle MCW$ and $\angle W \cong \angle M$	1. Given
2. $\overline{CT} \cong \overline{CT}$	2. Reflexive Property
3. $\angle MCT \cong \angle WCT$	3. Def of Angle Bisector
4. $\triangle MCT \cong \triangle WCT$	4. AAS
5. $\overline{MT} \cong \overline{WT}$	5. CPCTC

12.

Statement	Reason
1. A is the midpt of $\overline{GE}$, $\overline{QE}$&$\overline{VG}$ are $\perp$ to $\overline{GE}$, and $\overline{VA} \cong \overline{QA}$	1. Given
2. $\overline{GA} \cong \overline{EA}$	2. Def of Midpoint
3. $\triangle AGV \cong \triangle AEQ$	3. HL
4. $\angle Q \cong \angle V$	4. CPCTC

Geometry Review Sec 5-1, 5-2, 5-3, 5-5 ANSWERS

1. $x = 19.5$ 2. $x = 75°$ 3. $x = 11.5$ 4. Perimeter of $\triangle ABC = 49$ Perimeter of $\triangle JBK = 24.5$

5. Perimeter of $\triangle RST = 22 + 2a$ Perimeter of $\triangle EFG = 11 + a$
   In $\triangle EFG$ $m\angle G = 85°, m\angle E = 45°, m\angle F = 50°$

6. $XR = 6, QR = 12, QW = 10, WX = 8$

7. No, Pt C isn't equidistant from the endpoints of $\overline{MN}$

8. a. Yes, X is equidistant from the two sides of $\angle ABC$
   b. No, X isn't equidistant from the two sides of $\angle ABC$

9. $JK = 10.58$ 10. $\overline{AC}, \overline{BC}, \overline{AB}$ 11. $\angle E, \angle F, \angle G$

12. $\angle P, \angle R, \angle Q$ 13. $\overline{YZ}, \overline{XZ}, \overline{XY}$ 14. a) No b) Yes b) Yes

15. $2 < x < 16$