

Geometry H

Midterm Review Packet 2016-2017 Answer Key

1.  $\frac{7}{60}$
2.  $\frac{7}{27}$
3.  $-\frac{17}{42}$
4.  $\frac{7}{8}$
5. Infinitely Many Solutions
6.  $x = -3, y = 4$
6. (the second one) :  $3b(b - 2)$
7.  $(b + 8)(b + 1)$
8.  $(x + 4)(2x + 1)$
9.  $(5x + 4)(x - 3)$
10.  $8\sqrt{3}$
11.  $4\sqrt{3}$
12.  $6\sqrt{5}$
13. 7.2 units
14. (-1, -19)
15.  $x = 8, m\angle ABC = 52^\circ$
16.  $x = 30$
17.  $x = 3, LM = 9, MN = 3$
18.  $31^\circ$  and  $59^\circ$
19.  $132^\circ$  and  $48^\circ$
20.  $x = 20, y = 45$
21.  $x = 36, y = 20$
22.  $x = 10, m\angle CDF = 146^\circ, m\angle FDE = 34^\circ$
23. Segment:  $\overline{AC}, \overline{AB}, \overline{BD}, \overline{CA}, \overline{BA}, \overline{DB}$   
 Ray:  $\overrightarrow{AC}, \overrightarrow{AB}, \overrightarrow{DB}, \overrightarrow{CA}, \overrightarrow{BA}$   
 Line:  $m, n, \overleftrightarrow{AC}, \overleftrightarrow{AB}, \overleftrightarrow{CA}, \overleftrightarrow{BA}$
24.  $35^\circ$
25. F
26. a. Parallel      b. Perpendicular
27.  $y = -\frac{1}{3}x + \frac{13}{3}$
28. a.  $x = -7$       b.  $x = -1$
29.  $x = 12, y = -3,$   
 $m\angle 1, 3, 5, 7 = 156^\circ, m\angle 2, 4, 6, 8 = 24^\circ$

30. a.  $x = 24$ , Alt. Exterior Angles Converse  
 b.  $x = 5$ , Corresponding Angles Converse  
 c.  $x = \frac{203}{13}$ , Consecutive Int. Angles Converse

31.  $x = 45, y = 20$

32.

1.	1. Given
2. $3x - 15 + 2x + 10 = 180$	2. Consec. Int Ang Thm
3. $5x - 5 = 180$	3. Combine Like Terms
4. $5x = 185$	4. Addition Prop
5. $x = 37$	5. Division Prop

33.

1. $\angle 1 \cong \angle 2$	1. Given
2. $a \parallel b$	2. Alt Int Ang Converse
3. $\angle 3 \cong \angle 4$	3. Corresponding Ang Postulate
4. $\angle 1 \cong \angle 4$	4. Given
5. $\angle 2 \cong \angle 4$	5. Transitive Prop
6. $x \parallel y$	6. Corresponding Ang Converse

34.  $x = 18, y = 7.5, z = -7$  or  $z = 7$

35.  $x = 46$ , Acute

36.  $134^\circ$

37. a.  $x = 21, m\angle ACB = 75^\circ$

b.  $80^\circ$  or  $116^\circ$

38.  $x = 20$

39.  $x = 11, y = 30$

40. B

41. J

42.  $x = 15, y = 6$

43.

1. $\overline{DA} \parallel \overline{YN}$	1. Given
2. $\angle ADN \cong \angle YND$	2. Alt Int Ang Thm
3. $\overline{DA} \cong \overline{YN}$	3. Given
4. $\overline{DN} \cong \overline{DN}$	4. Reflexive Prop
5. $\triangle ADN \cong \triangle YND$	5. SAS
6. $\angle NDY \cong \angle DNA$	6. CPCTC

44.

1. $\angle D \cong \angle C$	1. Given
2. $\overline{AB} \cong \overline{EB}$	2. Given
3. $\angle ABD \cong \angle EBC$	3. VAT
4. $\triangle ABD \cong \triangle EBC$	4. AAS
5. $\overline{DB} \cong \overline{CB}$	5. CPCTC

45.

1. $\overline{GH} \cong \overline{KJ}$	1. Given
2. $\overline{KG} \perp \overline{GH}$	2. Given
3. $\overline{KJ} \perp \overline{JH}$	3. Given
4. $\overline{HK} \cong \overline{HK}$	4. Reflexive Prop
5. $\triangle GHK \cong \triangle JKH$	5. HL

46. D

47.  $x = 7$ ,  $P = 90$  inches

48.  $x = 29$ ,  $y = 64$

49.  $y = 13$ ,  $z = 14$

50.  $x = -3$ ,  $x = 7$

51.  $3\sqrt{15}$

52.  $x = 7.5$ ;  $37.5^\circ$ ,  $67.5^\circ$ ,  $75^\circ$

53.  $x = 7$ , Length = 21 yd, Width = 14 yd,  $P = 70$  yd

54.  $b = 70$ ,  $c = 30$

55. 60 units

56. 58 meters

57. 20 feet

58.  $\angle A \cong \angle G$  or  $\angle B \cong \angle F$  (alternate interior angles)  
 &  $\angle AEB \cong \angle GEF$  (VAT) so  $\triangle AEB \sim \triangle GEF$  by AA~  
 The distance between the campsites is 42.3 meters

59. a.  $x = 5$       b.  $x = \frac{52}{3}$       c.  $x = -1$ ,  $x = 6$

60. Since both pairs of corresponding sides are  
 proportional with a scale factor of  $\frac{5}{6}$  and the  
 included angles are congruent,  $\triangle RST \sim \triangle UVW$  by  
 SAS~

61. Reduction since  $0 < k < 1$

62. Enlargement since  $k > 1$

63.  $A'(4, 20)$   $B'(12, 12)$   $C'(8, -24)$   $D'(-16, -8)$

64.  $A'(-2, 4)$   $B'(1, 2)$   $C'(0, 1)$   $D'(-2, 3)$

65.  $D'(1, 8)$   $E'(9, 0)$   $F'(5, 0)$

66.  $G'(-3, 3)$   $H(0, 3)$   $J'(-1, 0)$

67.  $S'(5, 2)$   $T'(1, 4)$