**GEOMETRY 21: Review for Final Exam  *ANSWER KEY***

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| ***Part 1***   1. F 2. F 3. T 4. F 5. Point C 6. Line AB 7. Line CG 8. Yes 9. Segment EB 10. Infinitely many 11. x=7, m∡3=52o 12. 180 – y 13. ∡3 and ∡6 14. ∡DGF and ∡AGF 15. Parallel | 1. Rotation 17) Reflection 18) Translation   19) incenter, inscribed  20) circumcenter, circumscribed  21) centroid  22) orthocenter |

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| ***Part 2***   1. If an animal is a turtle, then it is a reptile. 2. Hyp.: It is a turtle, Concl.: it is a reptile 4. If angles are a linear pair, then they are supplementary, adjacent angles | 1. If angles are supplem, and adjacent, then they form a linear pair. 2. Angles are a linear pair if and only if they are supplem. and adjacent. 3. Yes, both conditional and converse are true. 4. X=50o 5. X=15o |
| 1. F 15) E 2. G 16) C 3. D 17) B 4. A 18) H | 1. x = 4.08 23) 149.72 2. 47.56 24) 132.44 3. 102.16 25) 30.28 4. 30.28 26) 47.56 |

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| ***Part 3***   1. C 4) C 2. C 5) C 3. B 6) A | 7) c 11) c 15) d 19) a  8) d 12) a 16) b 20) c  9) c 13) d 17) c 21) b  10) b 14) c 18) b 22) a  23) F 24) T 25) T 26) T  27) T 28) 65o 29) 60o | 30) |

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| ***Part 4***   1. x=15, y=38 2) x=7/2 or -3 3) A=6, b=15 | 1. Yes, AAS or ASA 6) yes, any AAS, ASA, 2. No SAS or SSS |
| 7) no 8) yes AAS or ASA 9) yes, HL | 10) |
| 11)  13) a. 134°; b. x=7, y=4 | 12)  7 – the bisector of the vertex  Angle of an isosisbis. of base |

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| ***Part 5***   1. 966 u2 2. 254 in2 3. 160 u2 4. 12.5 u2 | * + 1. u2   6) 31.5 m2  8)a) right  b)obtuse  c)obtuse | 7) slopes  Dist. Form.  AB=BC=CD=AD=5  Rhombus, Area=20 u2 | 9) 49 in2  10) 8 cm2  11) p=24  12)dist. Form.  MT=AH= b | 13) mdpts.  14) slope of  so  15) 10.7  16) x= 5, y=10 | 17) 3 cm  18) x=25 in  19) 30.90  20) 192 or  332.55 cm2  21) 36 or  62.35 ft2 |

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| ***Part 6***  1) 2) plane ABC 3)plane ABCplane GFE, plane CDEplane ABH | | |
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| ***Part 7*** *\*all SA are in square units, all V in cubic units*  1) SA=186 V=126  2) SA= V=  or SA=759.6, V=1039.23  3) SA=144+18 V=72  or SA=175.2, V=124.7  4) SA=320 V=300 | 5) 40  6) B =   1. H =15 2. l = 18.93 3. SA= 1828.6 4. 2184   11) r = 1.04 (need quad form for this one)  12) h = .3  13) r = 1.3 | 14) 415.1 (1304.2)  15) 1033.37 (3246.4)  16) l= 11 m  17) (68,094)  18) V = 691.2 (2171)  19) ) r=4.33, SA=142.15  20) 16  21) r = 3  22) 11,494.04  23) 94.03  24) 523.6  25) SA = 4 + 8 V = 56  SA = 28.4  89.13  V= 58.613  26) SA = 126 + 54 V = 126  SA= 250.45  V 218.24 | |

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| ***Part 8***   1. a 2) d 3)c 4) c 5)a 6) d 7) c 8) c 9) d 10) b 11) b 12) c 13) c 14) d 15) a 2. b 17) b 18) b 19) c 20) c 21) always 22) sometimes 23) always 24) always   25) x = 35/4  8.75, y = 14  26) a)  b)  c)  d) |
| 27) |

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| ***Part 9 \*all answers in degrees***   1. 144 2. 134 3. 98 | 1. 23 2. 49 3. 49 4. 12 5. 78 | 1. 300 2. 60 3. 102 4. 468/ 5. 176/9 mm | 1. 65 2. 40 3. 28 4. 57.5 5. 52 | 1. 63 |

***Part 10***

105.0 ft 2) 1.9 m 3) 15.8 km 4) 946.37 5) 32° 6) 37°

***Part 11***

1. Assume  is a median, then I is midpoint of , FI = IH by defn. midpoint.  by defn congruent.  by reflexive. Given that ∡GIF∡GIH, then by SAS. By CPCTC, , so is isosceles by defn of isosceles. But this contradicts the given which says is not isosceles. So our assumption must be false and  is not a median.
2. Assume . Then ∡3∡1 by corresponding ∡s postulate. Since , ∡1∡2 also by corresponding ∡s postulate. So ∡3∡2 by transitive property. Therefore  by converse of corresponding ∡s postulate. But this contradicts the given which says that line *s* is not parallel to line *t*. My assumption is false and line r is not parallel to line t.