

IM1H Book 2 Selected Answers

IM1H Dream Team

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1.
 - (a) $\angle 2, \angle 3, \angle 5, \angle 8$
 - (b) $\angle 1, \angle 4, \angle 6, \angle 7$
 - (c) $\angle 3, \angle 5$
 $\angle 2, \angle 8$
 - (d) $\angle 4, \angle 6$
 $\angle 1, \angle 7$
 - (e) Answers may vary. $\angle 1, \angle 5$
2.
 - (a) $\angle 2 + \angle 4 = 180^\circ$
 - (b) $\angle 2 + \angle 1 + \angle 3 = 180^\circ$
 - (c) $\angle 4 = \angle 1 + \angle 3$
 - (d) –
 - (e) –
3.
 - (a) If P is not equidistant from the coordinate axes, then P is not on the line $y = x$.
 - (b) Yes. Always.
4. –
5. Exactly one
6. –
7.
 - (a) $\angle AHK \cong \angle HKD$
 - (b) $\angle AHK \cong \angle EHB$
 - (c) $\angle EHB \cong \angle HKD$
 - (d) If two lines are cut by a transversal such that two corresponding angles are congruent, then the lines are parallel.
 - (e) $\angle KHB + \angle HKD = 180^\circ$
8.
 - (a) $\overline{RU} \parallel \overline{AT}$
 - (b) None

- (c) $\overline{RU} \parallel \overline{AT}$
 $\overline{RN} \parallel \overline{OT}$
 - (d) $\overline{RU} \parallel \overline{AT}$
 $\overline{AU} \parallel \overline{NT}$
 - (e) $\overline{AU} \parallel \overline{NT}$
 - (f) None
 - (g) $\overline{AU} \parallel \overline{NT}$
 - (h) None
9. –
10. –
11. No. Two lines on the same plane that never intersect.
12. It's constant. No.
13. –
14. (a) $\angle a + \angle b + \angle c = 180^\circ$
(b) $\angle x = \angle a$
 $\angle y = \angle b$
15. (a) $B(6, 0, 0)$
 $C(6, 3, 0)$
 $D(0, 3, 0)$
 $E(0, 0, 2)$
 $F(6, 0, 2)$
 $H(0, 3, 2)$
(b) $\overline{AH} = \sqrt{13}$
 $\overline{AC} = 3\sqrt{5}$
 $\overline{AF} = 2\sqrt{10}$
 $\overline{AG} = 7$
16. (a) $\overline{FD} \parallel \overline{BC}$
 $\overline{AG} \parallel \overline{CD}$
(b) $\overline{HS} \parallel \overline{YO}$
 $\overline{XO} \parallel \overline{SN}$
17. (a) $0 < x < 110$
(b) $81 < x < 143$
18. –
19. –
20. –

21. –
22. (a) $\overline{AB} : y = -\frac{1}{3}x$
 $\overline{BC} : y = -2x$
 (b) $\overline{KA} = 5$
 $\overline{KB} = 5$
 $\overline{KC} = 5$
 (c) –
 (d) –
 (e) Find the intersection of the perpendicular bisectors of any two side lengths.
23. (a) $4\sqrt{6}$
 (b) $4\sqrt{5}$
24. (a) $\vec{w} = [7, 6]$
 (b) $\vec{w} = [-5, 8]$
25. (a) $\overrightarrow{AB} = [3, 4]$
 $\overrightarrow{BC} = [9, -9]$
 $\overrightarrow{AB} + \overrightarrow{BC} = [12, -5]$
 (b) $\overrightarrow{AC} = \overrightarrow{AB} + \overrightarrow{BC}$
26. (a) $\sqrt{17}$
 (b) $\sqrt{a^2 + b^2 + c^2}$
27. –
28. –
29. 30°
30. (a) 12
 (b) 48
 (c) $y = \frac{1}{3}x$
 (d) $y = -3x + 24$
 (e) $F = (\frac{36}{5}, \frac{12}{5})$
 (f) $\frac{12}{5}\sqrt{10}$
 (g) 96
 (h) It's twice the area because it's base times height.
 (i) $\frac{12}{5}\sqrt{10}$