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) $\angle 2 + \angle 4 = 180°$
   (b) $\angle 2 + \angle 1 + \angle 3 = 180°$
   (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 then lines are parallel.
   (e) $\angle KHB + \angle HKD = 180°$
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) $\angle a + \angle b + \angle c = 180°$

(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) $\sqrt{a^2 + b^2 + c^2}$