

Geometry Practice Answers // Mr. Fitch

p288 #1-4, 6, 8, 13-16, 21-23, 26, 32, 33

- \overline{NO}
- 23
- 4
- A midsegment is a segment whose endpoints are the midpts. of two sides of a triangle.
- The student is assuming that \overline{PL} is a midsegment of $\triangle NOT$, which would require that L be the midpt. of \overline{OT} , which is not given.
- $\overline{GJ} \parallel \overline{FK}$, $\overline{JL} \parallel \overline{HF}$, $\overline{GL} \parallel \overline{HK}$
- \overline{AC}

- \overline{CB}
- 40
- 50
- 6

6 points each

- 12.5
- 17
- 26a. 1050 ft
- 26b. 437.5 ft
- 45
- 100

p296 #12-16 p305 #15-18

- 27, 27
- By the Converse of the Angle Bis. Thm., \overline{HL} is the angle bis. of $\angle KHF$ because a point on \overline{HL} is equidistant from K and F .
- 9
- 54, 54
- $x = 12$, $JK = 17$, $JM = 17$

- C
- Z
- 2
- 4

10 points each

p312 #8-13, 17-20

- $TY = 18$, $TW = 27$
- $ZY = 4.5$, $ZU = 13.5$
- $VY = 6$, $YX = 3$
- Median; it connects a vertex of $\triangle ABC$ to the opposite side.
- Neither; it does not have a vertex of $\triangle ABC$ as an endpoint.

10 points each

- Altitude; it extends from a vertex of $\triangle ABC$ and is perpendicular to the opposite side.
- H
- M
- J
- Y

p328 #9-12, 15-18, 21-29, 34, 37, 38, 42, 48**4 points each**

9. $\angle M, \angle L, \angle K$

18. $\overline{AC}, \overline{AB}, \overline{BC}$

10. $\angle D, \angle C, \angle E$

21. No; $2 + 3 \neq 5$.

11. $\angle G, \angle H, \angle J$

22. Yes; $11 + 12 > 15$; $11 + 15 > 12$; $12 + 15 > 11$.

12. $\angle A, \angle B, \angle C$

23. No; $8 + 10 \neq 19$

15. $\overline{MN}, \overline{NO}, \overline{MO}$

24. Yes; $1 + 15 > 15$; $15 + 15 > 1$.

16. $\overline{FH}, \overline{GF}, \overline{GH}$

25. Yes; $2 + 9 > 10$; $9 + 10 > 2$; $2 + 10 > 9$.

17. $\overline{TU}, \overline{UV}, \overline{TV}$

26. No; $4 + 5 \neq 9$.

27. $4 < s < 20$

28. $11 < s < 21$

29. $0 < s < 12$

34. \overline{AB}

37. \overline{RS} .

38. \overline{CD}

42.

$3 + 6 \neq 9$

$5 + 6 > 9$

$6 + 9 > 11$

$6 + 9 \neq 15$

Therefore, only the 5 and the 11 work. There are 2 favorable outcomes out of 4 possibilities. The probability is 50% or 1 out of 2.

48. 4

p336 #6-10, 16-19, 21, 27**9 points each**

6. $AD > AB$

7. $RT > RP$

8. $KL > ML$

9. No conclusion.

10. The lengths of the two sections of the robotic arm do not change as the arm moves. The included angle between the arm sections of the 60° opening is greater than the included angle of the 40° opening. By the Hinge Thm., the tip of the arm is closer to the base for the 40° opening.

16. $QR > PT$; $\triangle PTQ$ and $\triangle RQT$ have two \cong sides. As for the angle formed by those sides, $92 > 90$, so $QR > PT$ by the Hinge Thm.

17. $m\angle QTR > m\angle RTS$; $m\angle PTQ + m\angle QTR + m\angle RTS = 180$, so $m\angle PTQ + m\angle RTS = 180 - m\angle QTR = 180 - 92 = 88$. Thus $m\angle RTS < 88$ by the Comparison Prop. of Ineq., so $m\angle QTR > m\angle RTS$ by the Trans. Prop. of Ineq.

18. $PT > RS$;

$QP = TR, QT = TS, m\angle QTR > m\angle RTS$;

$m\angle PTQ + m\angle QTR + m\angle RTS = 180$, so

$m\angle PTQ + m\angle RTS = 180 - m\angle QTR = 180 - 92 = 88$. Thus

$m\angle RTS < 88$ by the Comparison Prop. of Ineq., so

$m\angle QTR > m\angle RTS$ by the Trans. Prop. of Ineq. So, $PT > RS$ by the Hinge Thm.

19a. The two labeled angles are formed by congruent sides of the two triangles, so the side opposite the 94° angle should be greater than the side opposite the 91° angle by the Hinge Thm. Thus the side labeled "13" must be longer than the side labeled "14."

Answers may vary. Sample:

19b. Switch the angle labels 91° and 94° .

21. D

27. I

p344 #31-37; p345 #7, 9, 10; p346 #1, 2, 8**7 points each**

31. $\overline{RS}, \overline{ST}, \overline{RT}$

7. $\angle A, \angle C, \angle B$.

1. C

32. No, $8 + 5 \neq 15$.

9. $\overline{ST}, \overline{SR}, \overline{RT}$.

2. I

33. Yes; $10 + 12 > 20$; $10 + 20 > 12$; $12 + 20 > 10$.

10. $\overline{KV}, \overline{VM}, \overline{KM}$.

8. G

34. $1 < s < 25$

35. $<$

36. $>$

37. $<$

