

Geometry Practice Answers // Mr. Fitch // 2016-2017

p444 #1, 2, 4, 5

25 points each

1. $\angle H$
2. JT
4. 6
5. In your own words.

p444 #12, 14, 15, 18, 19, 23, 37, 39, 43-46, 52, [22]; p455 #1-3, 5

5 points each

12. $\triangle ABC \sim \triangle DEF$; scale factor is 3 : 5
14. $\triangle JKL \sim \triangle PQR$; scale factor is 2 : 1
15. Not similar. Sample explanation: $\frac{TH}{LE} = \frac{10}{8} = \frac{5}{4}$, $\frac{AT}{UL} = \frac{12}{9} = \frac{4}{3}$.
Since the ratio of the longer sides is not the same as the ratio of the shorter sides, the corresponding sides are not proportional, and the polygons are not similar.

18. $x = 4$, $y = 3$

43. always

19. $x = 8$, $y = 9$, $z = 5.25$

44. never

23. 5 in.

45. sometimes

37. $x = 10$; 2 : 1

46. sometimes

39. Recommend graph paper; need to choose a scale.

52. H

22. 162 in. high by 288 in. wide, or 24 ft wide by 13.5 ft high.

1. $m\angle R = 180^\circ - (35^\circ + 45^\circ) = 100^\circ = m\angle A$, and $\angle AEZ \cong \angle REB$ since vertical angles are congruent, so $\triangle AEZ \sim \triangle REB$ by the AA ~ Postulate.
2. Since the ratios of corresponding sides are all 2 : 3, $\triangle ABC \sim \triangle FED$ by the SSS ~ Theorem.
3. $\angle G \cong \angle E$ and $\frac{GU}{EF} = \frac{GA}{EB}$. So, $\triangle GUA \sim \triangle EFB$ by the SAS ~ Theorem.
5. Method A is not correct because the ratio $\frac{4}{8}$ does not use corresponding sides.

p455 #7-10, 15, 23, 24, 39, 41 [25]

10 points each

7. $\triangle FGH \sim \triangle KJH$ by the AA ~ Postulate.
8. Not similar, because using the sides that contain the right angles, the ratio of the shorter sides is 1 : 1 while the ratio of the longer sides is 5 : 4.
9. $\triangle RST \sim \triangle PSQ$ by the SAS ~ Theorem.
10. Not similar, $\frac{JL}{PQ} = \frac{60}{40} = \frac{3}{2}$, $\frac{KL}{PR} = \frac{45}{30} = \frac{3}{2}$, but $\frac{JK}{RQ} = \frac{32}{22} = \frac{16}{11}$.
15. There are a pair of congruent vertical angles and a pair of congruent right angles, so the triangles are similar by the AA ~ Postulate; 180 ft.

23. 180 ft *Hint: 16 inches = 1 ft 4 in or 1.333 ft*
24. 6
39. C
41. 2 : 3.

25. 20

p464 #1, 2, 12, 13

25 points each

1. 6
2. $4\sqrt{3}$
12. $\sqrt{40}$ or $2\sqrt{10}$
13. 12

p464 #3-9, 14-16, 19-21

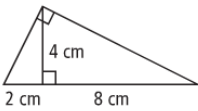
7 points each

- 3. h
- 4. g
- 5. j, h
- 6. d, d
- 7a. \overline{RT}
- 7b. \overline{RP} and \overline{PT}
- 7c. \overline{PT}
- 8. The length 8 is the entire hypotenuse, so the segments of the hypotenuse have lengths 3 and 5. The correct proportion is $\frac{3}{x} = \frac{x}{5}$.

- 9. Answers may vary. Sample: $\triangle KJL \sim \triangle NJK \sim \triangle NKL$
- 14. 25
- 15. $\sqrt{63}$ or $3\sqrt{7}$
- 16. $\sqrt{48}$ or $4\sqrt{3}$
- 19. $x = 20, y = 10\sqrt{5}$
- 20. $x = 10, y = 2\sqrt{21}$
- 21. $x = 3\sqrt{7}, y = 12$

p465 #22, 23a, 41 [32, 39]; p474 #1, 2, 4, 5

10 points

- 22. 5 ft
- 23a. 4 cm
- 23b. 

- 23c. Answers may vary. Sample: Draw a 10-cm segment first. Then construct a \perp segment of length 4 cm that is 2 cm from one endpoint and connect the endpoints to form a triangle.

32. They are equal. Explanations may vary. Sample: Let a equal the length of the altitude and $2x$ equal the length of the hypotenuse, then by Corollary 1 to Theorem 7-3, $\frac{x}{a} = \frac{a}{x}$, so $a = x$.

39. 4

41. 5

1. d

2. c

4. 5

5. 15

p474 #9, 10, 13, 15, 18-20, 31 [36]

10 points each

- 9. 7.5
- 10. 5.2
- 13. 8 mm
- 15. 7.5
- 18. 9.6
- 19. 6
- 20. 4.8
- 31. 575 ft
- 36. $x = 18$ m, $y = 12$ m

Interactive Achievement Practice

Question	Answer	Question	Answer
1	B	10	B
2	B	11	B
3	B	12	D
4	D	13	C
5	C	14	D
6	A	15	A
7	D	16	A
8	A	17	D
9	B		

p495 #1, 4-6

25 points each

1. 37

4. $x = 4\sqrt{3}$

5. The three numbers a , b , and c must be whole numbers that satisfy $a^2 + b^2 = c^2$.

6. The longest side is 34 so the student should have tested $16^2 + 30^2 = 34^2$.