

Math 3301 Foundations of Geometry
Unit II Practice Test

Solutions

1. (a) False (b) True (c) True

2.

Statements	Reasons
1. $\angle 1 \cong \angle 2$	1. Given
2. $\angle 3 \cong \angle 4$	2. Given
3. $\overline{NL} \cong \overline{NL}$	3. Reflexive
4. $\triangle MNL \cong \triangle ONL$	4. ASA
5. $\overline{NM} \cong \overline{NO}$	5. CPCTC
6. $\overline{ML} \cong \overline{OL}$	6. CPCTC
7. LMNO is a kite	7. Defn of a kite (2 pairs of \cong consecutive sides)

3.

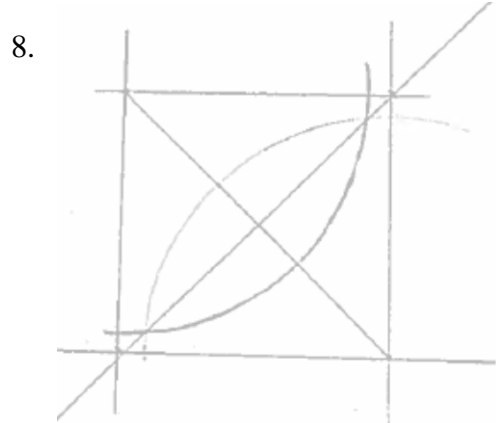
Statements	Reasons
1. $\triangle EBF \cong \triangle GHI$	1. Given
2. $\overline{EF} \cong \overline{GH}$	2. CPCTC
3. $\triangle AEH \cong \triangle GFI$	3. Given
4. $\overline{EH} \cong \overline{FI}$	4. CPCTC
5. EFGH is a \square	5. If both pairs of opposite sides of a quadrilateral are \cong , then the figure is a \square .

4. (a) True (b) True (c) True (d) True (e) False

5. $x = 3, CD = 9$ 6. $x = 1, DE = 5, BC = 10$

7.

S	R
1. Par AD BC + diagonals AC & BD	1. Given
2. $\overline{AB} \cong \overline{DC}$	2. opposite sides \cong
3. $\overline{BD} \cong \overline{AC}$	3. diagonals of rect \cong
4. $\overline{AD} \cong \overline{BC}$	4. reflexive
5. $\triangle ABD \cong \triangle DCA$	5. SSS
6. $\angle 1 \cong \angle 2$	6. CPCTC



9. (a) False (b) True

10. 22.2

11. $m\angle B = m\angle C = 113^\circ$, $m\angle D = 67^\circ$

12. (a) 60 mi/h (b) 8 h/25 ab

13. 200 mi

14. (a) 3.5 cm (b) 2 cm (c) 8 cm (d) 95°

15. (a) 21 ft (b) $BF = 21$ ft, $FC = 56$ ft

16.

S	R
1. $\triangle ABC$ is isosceles with base \overline{BC}	1. Given
2. $\angle C$ is suppl. to $\angle 1$	2. Given
3. $m\angle C + m\angle 1 = 180^\circ$	3. Defn. Suppl. \angle s
4. $\angle B \cong \angle C$	4. Base \angle s of isosceles $\triangle \cong$
5. $m\angle B = m\angle C$	5. Defn. $\cong \angle$ s
6. $m\angle B + m\angle 1 = 180^\circ$	5. Subst.
7. $\angle B$ is suppl. to $\angle 1$	7. Defn. Suppl. \angle s
8. $\overline{DE} \parallel \overline{BC}$	8. Same side int. \angle s $\cong \Rightarrow \parallel$ lines
9. $\frac{ED}{DB} = \frac{AE}{EC}$	9. Line \parallel to third side of \triangle divides other sides into prop. segments (Thm 5.11)

17. (a) 22 cm (b) 915 ft²

18.

S	R
1. ABCD is a rhombus w/ diagonals \overline{AC} & \overline{BD}	1. Given
2. $\overline{AC} \perp \overline{BD}$	2. Diagonals of rhombus are \perp
3. $\angle BEC$ is rt \angle	3. \perp lines form rt \angle s
4. $\triangle BEC$ is a rt \triangle	4. def of rt \triangle
5. $\overline{PE} \perp \overline{BC}$	5. Given
6. \overline{EP} is an altitude of $\triangle BEC$ from rt $\angle BEC$	6. Defn of altitude
7. $\frac{BP}{PE} = \frac{PE}{EC}$	7. \perp line from the rt \angle to the hyp is the geometric mean (Cant)
8. $PE^2 = EP \cdot PC$	8. Mean-Extremes Prop.

19. 60 yd

20. 14 cm (approximately)

21. 56 ft (approximately)

22. If $b = 7$ ft, find c .

23. 10 cm

24. 1 mi