

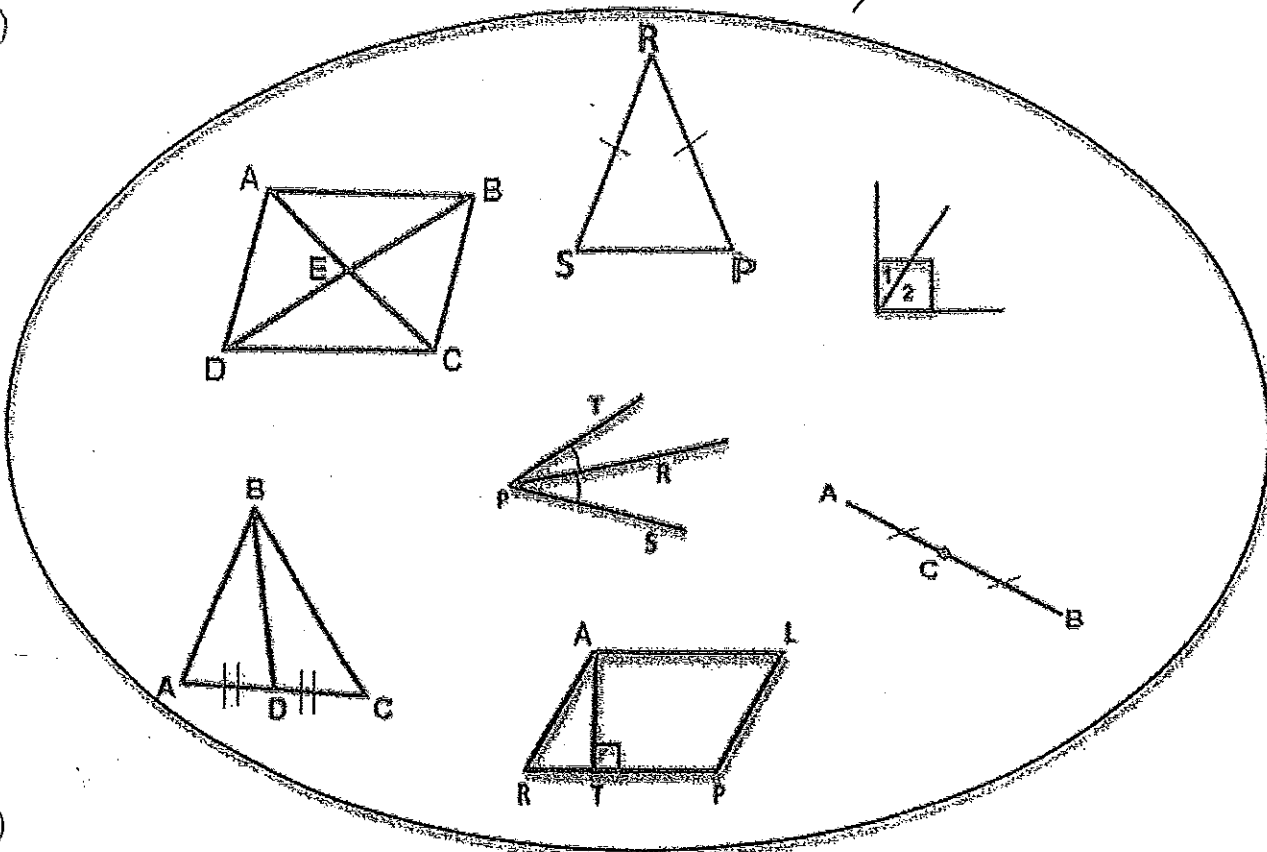
Basic Geometry: Fundamentals Needed For Proofs

ANSWERS

Name: _____ Date: _____

Use the diagrams in the oval below to answer:

1	Name an angle bisector.	\overline{PR}
2	Name a median.	\overline{RD}
3	Name a pair of complementary angles.	$\angle 1$ and $\angle 2$
4	Name two perpendicular segments.	$\overline{AT} \perp \overline{RP}$
5	Name a pair of congruent angles.	$\angle TPR \cong \angle RPS$
6	Name a pair of congruent line segments.	$\overline{AC} \cong \overline{CB}$ (or $\overline{RS} \cong \overline{RP}$ or $\overline{AD} \cong \overline{DC}$)
7	Name a pair of supplementary angles.	(lots of possible answers) $\angle AEB$ and $\angle AED$
8	Name a pair of vertical angles.	$\angle AEB$ and $\angle DEC$ or $\angle AED$ and $\angle BEC$
9	Name a point that is a midpoint.	point D or point C
10	Name an isosceles triangle.	$\triangle SRP$



Introduction to Proofs

Name _____ Period _____ Date _____

When you are completing proofs in geometry it is important to "squeeze" as much information from our givens as possible. Assume that every statement below is the beginning of a new proof. What information could you conclude?

***Disclaimer: When you are completing full proofs you may not always need to use each given or necessarily go as far as you need to on this page.*

* These are suggested answers... in some cases, other answers are possible

1. $m\angle 1 = m\angle 2$

GIVEN

$\angle 1 \cong \angle 2$	Defn. of \cong
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2. $m\angle 1 + m\angle 5 = 90$ degrees

GIVEN

$\angle 1$ and $\angle 5$ are complem.	Defn. of complem.
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3. $\angle 1$ and $\angle 7$ form a linear pair

GIVEN (or defn. of lin. pr. from diagram)

$\angle 1$ and $\angle 7$ are supplementary	Lin. Pair Post.
$m\angle 1 + m\angle 7 = 180$	Defn. of supplem.

4. $\angle 8$ is a rt angle and $\angle 9$ is a rt angle

GIVEN

$\angle 8 \cong \angle 9$	Right \angle Thm
$m\angle 8 = m\angle 9$	Defn. \cong

5. $\angle 4$ and $\angle 7$ are complementary

GIVEN

$m\angle 4 + m\angle 7 = 90$	Defn. of complementary
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6. $\angle 1 \cong \angle 7$

GIVEN

$m\angle 1 = m\angle 7$	Defn. of \cong
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7. $m\angle 1 + m\angle 4 = 180$ degrees

GIVEN

$\angle 1$ and $\angle 4$ are supplementary	Defn. of Supplementary
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8. $\angle 8$ and $\angle 9$ are vertical angles

GIVEN (or defn. of vert. \angle from diagram)

$\angle 8 \cong \angle 9$	Vertical \angle 's Thm
$m\angle 8 = m\angle 9$	Defn. \cong

9. $\angle 3$ and $\angle 8$ are supp. angles

GIVEN

$$m\angle 3 + m\angle 8 = 180^\circ$$

Defn. of supplementary

10. $\angle 8$ and $\angle 10$ are both complementary to $\angle 7$

GIVEN

$$\angle 8 \cong \angle 10$$

Congruent Complements Thm.

11. $\angle 1$ and $\angle 2$ are supplementary

GIVEN

$$m\angle 1 + m\angle 2 = 180$$

Defn. of supplem.

12. $\angle 1$ and $\angle 5$ are supplementary

GIVEN

$$m\angle 1 + m\angle 5 = 180$$

Defn. of supplem.

13. $\angle ABC$ is a right angle

GIVEN

$$m\angle ABC = 90^\circ$$

Defn. of right \angle

14. $DB = SG$

GIVEN

$$SG = DB$$

Symmetric

or $DB \cong SG$ by Defn. \cong

15. $\angle H$ and $\angle P$ form a linear pair

GIVEN (or defn. of _____ from diagram)

$\angle H$ and $\angle P$ are supplementary

Lin. Pr. Postulate

$$m\angle H + m\angle P = 180$$

Defn. of supplem.

} Common "triple"

16. $\overline{MA} \cong \overline{TH}$

GIVEN

$$MA = TH$$

Defn. \cong

17. $m\angle ABC = (147)$ $m\angle JLM = (147)$

GIVEN

$$m\angle ABC = m\angle JLM$$

Substitution

$$\angle ABC \cong \angle JLM$$

Defn. \cong

18. $TI = FG, FG = SD$

GIVEN

$$TI = SD$$

Transitive POE

20. $\angle 3$ and $\angle 7$ are comp;
 $\angle 6$ and $\angle 7$ are comp

GIVEN

$$\angle 3 \cong \angle 6$$

Congruent complement. Thm.

$$m\angle 3 = m\angle 6$$

Defn. \cong

21. $\angle QWE$ and $\angle MNB$ are supp;
 $\angle WSZ$ and $\angle MNB$ are supp

GIVEN

$$\angle QWE \cong \angle WSZ$$

Congruent Supplem. Thm

$$m\angle QWE = m\angle WSZ$$

Defn. \cong

22. $m\angle 7 = 30$, $m\angle 8 = 30$

GIVEN

$$m\angle 7 = m\angle 8$$

Substitution

$$\angle 7 \cong \angle 8$$

Defn. \cong

23. $\angle 1 \cong \angle 8$

GIVEN

$$m\angle 1 = m\angle 8$$

Defn. \cong

24. $AB = DC$; $DC = EF$; $EF = GH$; $GH = IJ$

GIVEN

$$AB = IJ$$

Transitive POE

25. $\angle MJR$ is a rt angle;
 $\angle TUV$ is a rt angle

GIVEN

$$\angle MJR \cong \angle TUV$$

Right angles Theorem

$$m\angle MJR = m\angle TUV$$

Defn. \cong