Name: _____ Class: _____ Date: _____ ID: A

Geometry--Unit 6 Study Guide

1. Find the measure of an exterior angle of a regular polygon with 20 sides. Round to the nearest tenth if necessary.
   a. 360
   b. 162
   c. 18
   d. 3240

$\frac{360}{20}$

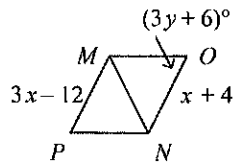
Write an equation in point-slope form of the line having the given slope that contains the given point.

2. $m = 4, (2, 5)$
   a. $y = 4x + 5$
   b. $y - 5 = 4(x - 2)$
   c. $y - 5 = 2(x - 4)$
   d. $y - 2 = 4(x - 5)$

Determine whether $\overleftrightarrow{WX}$ *and* $\overleftrightarrow{YZ}$ *are* parallel, perpendicular, or neither.

3. $W(0, -3), X(-1, 5), Y(2, 5), Z(-1, 2)$
   a. parallel
   b. perpendicular
   c. neither

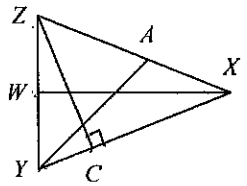
4. Triangles *MNP* and *OMN* are congruent equilateral triangles. Find x and y.



   a. $x = 4, y = 18$
   b. $x = 4, y = 22$
   c. $x = 8, y = 22$
   d. $x = 8, y = 18$

5. Solve $x^2 - 16x + 64 = 0$.
   a. {4}
   b. {–4}
   c. {–8, 8}
   d. {8}

6. $\overline{ZC}$ is an altitude, $\angle CYW = 9x + 38$, and $\angle WZC = 17x$. Find $m\angle WZC$.



   a. 18
   b. 34
   c. 32
   d. 31

7. Find the measure of an interior angle of a regular polygon with 14 sides. Round to the nearest tenth if necessary.
   a. 154.3
   b. 360
   c. 2160
   d. 25.7

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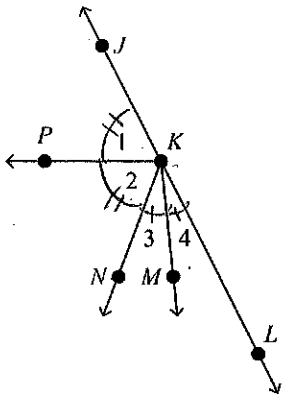
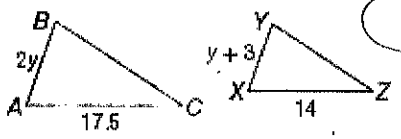
In the figure, $\overrightarrow{KJ}$ and $\overrightarrow{KL}$ are opposite rays. $\angle 1 \cong \angle 2$ and $\overrightarrow{KM}$ bisects $\angle NKL$.



8. If $\angle JKN$ is a right angle and $m\angle 4 = 2(3x + 6)$, what is x?
   a. 30
   b. 45
   c. 5.5
   d. 9.5

9. If $\triangle ABC \sim \triangle XYZ$, find y.

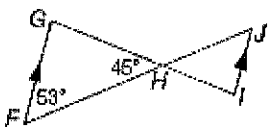


y = 5

Simplify each expression. Write your answer in simplified radical form.

10. $\frac{2\sqrt{3}}{\sqrt{6}-2}$ $3\sqrt{3} + 2\sqrt{3}$

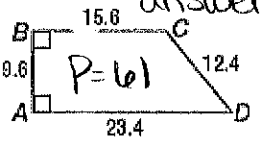
11. Find $m\angle I$.

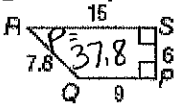


82°

12. Determine whether trapezoid $ABCD \sim$ trapezoid $PQRS$. Justify your answer.

answers may vary





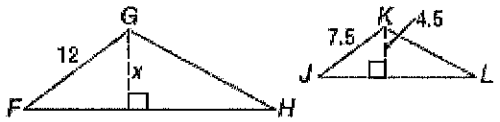
SF = 1.73
P SF = 1.65

no = SF are different between the sides.

13. If $\triangle ABC \sim \triangle EFG$ and $\overline{BD}$ and $\overline{FH}$ are medians, find BD.

9 units

For the following questions, $\triangle FGH \sim \triangle JKL$.



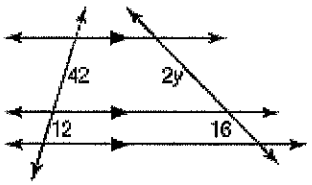
14. Find the ratio of the perimeter of $\triangle FGH$ to the perimeter of $\triangle JKL$.

$\frac{8}{5}$

15. Find the value of x.

$x = 7.2$

16. Find the value of y.



y = 28

Find each product.

17. $(2c - 1)^2$ $4c^2 - 4c + 1$

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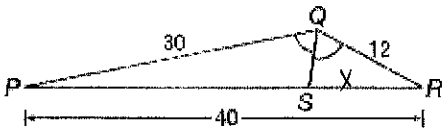
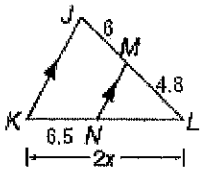
18. Find SR.



$SR = \frac{80}{7}$ units

19. Find the value of x.



$x = 5.85$

20. In an orchard of apple and peach trees, $\frac{3}{7}$ of the trees are peaches. What is the ratio of apple trees to peach trees?

$\frac{4}{3}$

21. A painting that is 48 inches by 12 inches is reduced to fit on a canvas that is 30 centimeters by 10 centimeters. Find the maximum dimensions of the reduced painting.

30in. by $7\frac{1}{2}$in.

22. The ratio of the measures of the sides of a triangle is 2:5:6. If the length of the longest side is 48 inches, find the perimeter.

104 in.

23. A triangle with coordinates $A(0, 0)$, $B(4, 0)$, and $C(0, 4)$ is enlarged by a factor of 2. What are the coordinates of the image?

(0,0) ; (8,0) ; (0,8)

24. $\triangle ABC \sim \triangle DEF$, $AB = 8$, $BC = 13$, $AC = 15$, and $DF = 20$. Find the perimeter of $\triangle DEF$.

48 units

25. When a 15-foot tall climbing wall cast a 20-foot shadow, a building cast a 32-foot shadow. Find the height of the building.

24ft.

two column

Write ~~a paragraph~~ proof.

26. $\overleftrightarrow{PQ}$ and $\overleftrightarrow{RS}$ intersect at point T and $\angle PTR \cong \angle RTQ$. Prove $\overleftrightarrow{PQ} \perp \overleftrightarrow{RS}$.

See back page

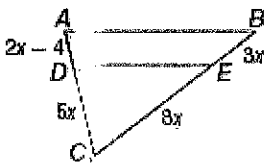
27. In $\triangle ABC$, $m\,A = 51$, $AB = 14$, and $AC = 20$. In $\triangle DEF$, $m\,D = 51$, $DE = 16.8$, and $DF = 24$. Determine whether $\triangle ABC \sim \triangle DEF$. Justify your answer.

yes ∽, SAS

28. $\triangle ABC \sim \triangle JKL$, $AB = 12$, $BC = 18.4$, $KL = 6.9$, and $JL = 5.6$. Find the scale factor of $\triangle ABC$ to $\triangle JKL$.

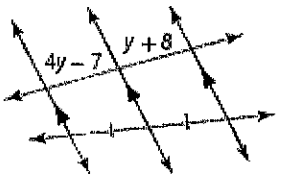
$\frac{8}{3}$

29. Find AD so that $\overline{DE} \parallel \overline{AB}$



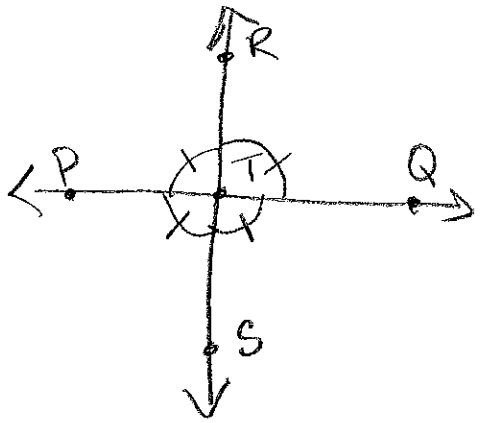
60units

30. Find the value of y.



$y = 5$

(26)



① $\overleftrightarrow{PQ}$ and $\overleftrightarrow{RS}$ intersect at point T. $\angle PTR \cong \angle RTQ$.	① Given
② $\angle PTR \cong \angle QTS$ $\angle RTQ \cong \angle PTS$	② VAT
③ $\angle PTR \cong \angle RTQ$ $\angle QTR \cong \angle QTS$ $\angle QTS \cong \angle STP$ $\angle STP \cong \angle PTR$	③ Substitution
④ $\overleftrightarrow{PQ} \perp \overleftrightarrow{RS}$	④ Converse of Perp. Lines form $\cong$ adjacent $\angle$s (Theorem 2.11)