Name AK Date

Post Course

Post Course Test

Find the length of $\overline{ST}$.

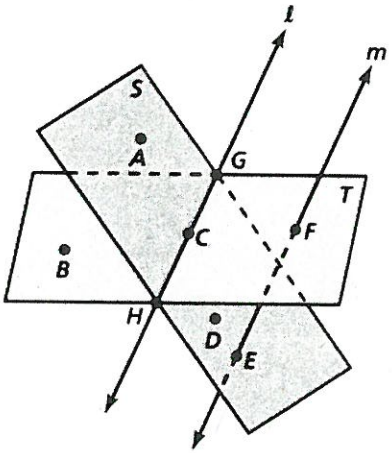
1. S 27 M 58 T

2. S T 19 M 15 O, 47

3. $J(-3, 7)$ and $K(4, -2)$ are endpoints of a line segment. Find the coordinates of the midpoint M. Find the distance between the endpoints of $\overline{JK}$.

4. The midpoint of JK is $M(2, 5)$. One endpoint is $J(-4, 2)$. Find the coordinates of endpoint K. Find the distance between the endpoints of $\overline{JK}$.

Use the diagram to decide whether the statement is true or false.



5. Points G, C, and H are collinear.

6. Plane S and plane T intersect at line m.

7. Points A, B, and C lie on plane T.

8. $\overrightarrow{CG}$ and $\overrightarrow{FE}$ are opposite rays.

9. Point C lies on plane S and plane T.

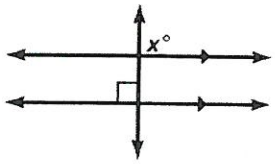
10. Plane S is perpendicular to plane T.

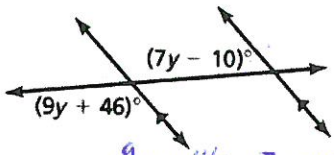
Solve the equation.

11. $9x - 16 = 7x + 12$

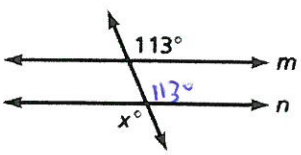
12. $5(3x + 2) = -6x - 11$

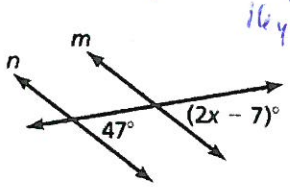
Find the value of x or y. State which theorems or postulates you used.

13. 

14. 

Find the value of x that makes $m \parallel n$.

15. 

16. 

Write an equation of the line that passes through the given point and is (a) parallel to and (b) perpendicular to the given line.

17. $(-2, -1)$, $y = -3x + 2$

18. $(-3, 1)$, $x = 0$

Answers

1. 85
2. 28
3. Mid: $(1/2, 5/2)$ Dist: $\sqrt{130}$
4. $(8, 8)$ $6\sqrt{5}$
5. T
6. F
7. F
8. F
9. T
10. F
11. 14
12. −1
13. $X = 90$ Corresponding Angles Thm Linear Pair Post.
14. $y = 9$ Corresponding Angles Thm Linear Pair Post
15. 113°
16. 27°
17. a. $y = -3x - 7$ b. $y = \frac{1}{3}x - \frac{1}{3}$
18. a. $x = -3$ b. $y = 1$

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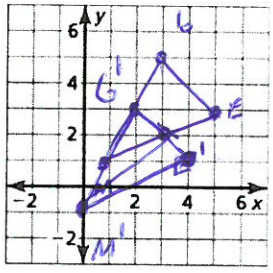
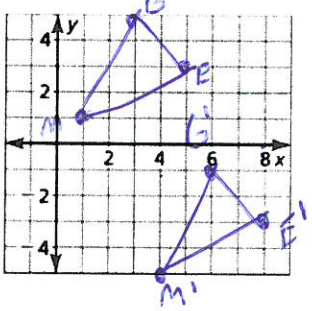
Post Course Test (continued)

Graph triangle $\triangle MEG$ with vertices $M(1, 1)$, $E(5, 3)$, and $G(3, 5)$ and its image after the translation.

19. $(x, y) \rightarrow (x - 1, y - 2)$

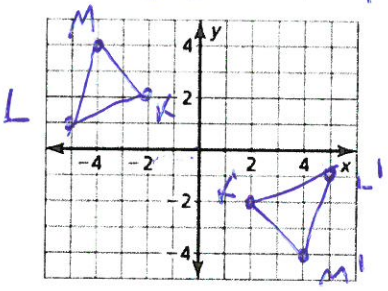


20. $(x, y) \rightarrow (x + 3, y - 6)$

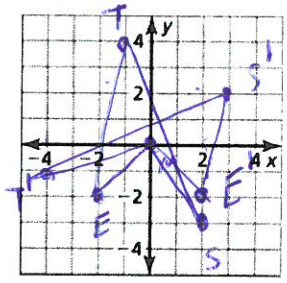


Graph the polygon with the given vertices and its image after a rotation of the given number of degrees about the origin.

21. $M(-4, 4)$, $L(-5, 1)$, $K(-2, 2)$; 180° (4,-4) (5,-1) (2,-2)

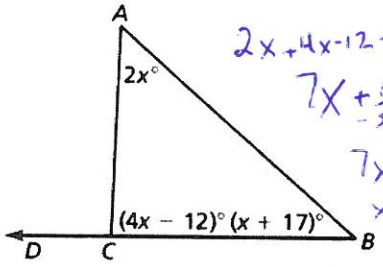


22. $M(0, 0)$, $E(-2, -2)$, $T(-1, 4)$, $S(2, -3)$; 270° clockwise (0,0) (2,-2) (-4,-1) (3,2)



Find the measure of each angle.

23.



2x + 4x - 12 + x + 17 = 180

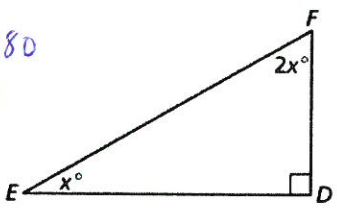
7x + 5 = 180

-5 -5

7x = 175

x = 25

24.



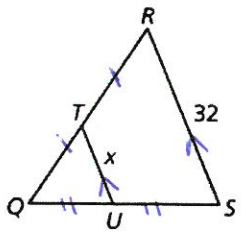
x + 2x = 90

3x = 90

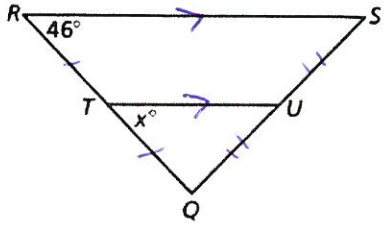
x = 30

$\overline{TU}$ **is a midsegment of $\triangle QRS$. Find the value of x.**

25.



26.



Answers

19. See left.
20. See left.
21. See left.
22. See left.
23. 50°
    42°
    88°
    x = 25°
24. 30°
    60°
    x = 30°
25. x = 16
26. x = 45°

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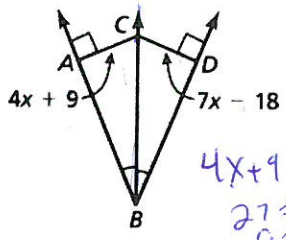
Post Course **Post Course Test (continued)**

Find *AC*. Identify the theorem you used.

27.

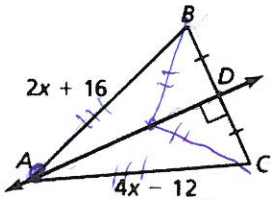


$4x+9=7x-18$

$27=3x$

$9=x$

28.

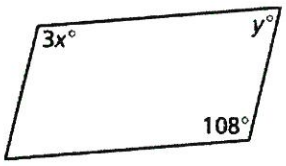


$2x+16=4x-12$

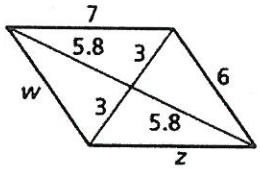
$28=2x$

Find the value of each variable in the parallelogram.

29.



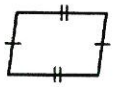
30.



Give the most specific name for the quadrilateral. Explain your reasoning.

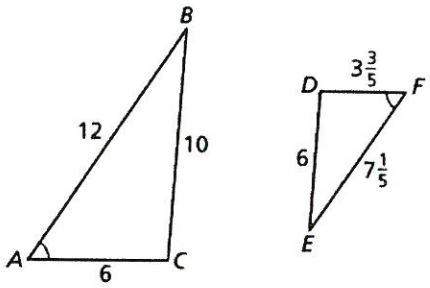
31.

32.



Determine whether the triangles are similar. If they are, write a similarity statement.

33.



$\frac{12}{7\frac{1}{5}} \stackrel{?}{=} \frac{10}{6} \stackrel{?}{=} \frac{6}{3\frac{3}{5}}$

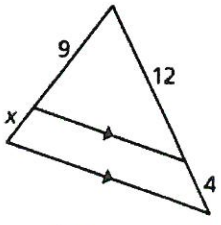
$\frac{12}{36/5} \stackrel{?}{=} \frac{5}{3} \stackrel{?}{=} \frac{6}{18/5}$

$12 \cdot \frac{36}{5} \stackrel{?}{=} 5/3 \stackrel{?}{=} 6 \cdot \frac{18}{5}$

$5/3 = 5/3 = 5/3$ ✓

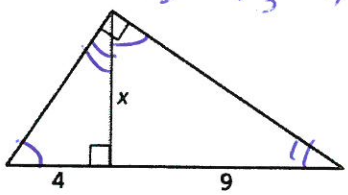
Find the value of the variable

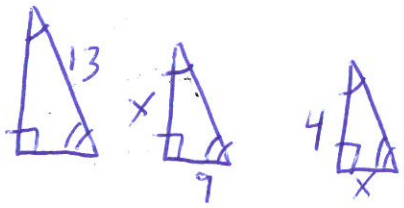
34.



$\frac{12}{4} = \frac{9}{x}$

35.





$\frac{x}{9} = \frac{4}{x}$

$x^2 = 36$

$x = 6$

Answers

27. Every point on Angle Bisector is Equidistant to sides of the angles

$x=9$

28. Every point on perp. Bisector is equidistant to endpoints of segment

$x=14$

29. $x=36^\circ$

$y=72^\circ$

30. $w=6$

$z=7$

31. Rectangle

Equilangular

Opp Angles are =.

32. Parallelogram

Opp sides are =

33. Yes, SSS

34. $x=3$

35. $x=6$