

## Test - Unit 5

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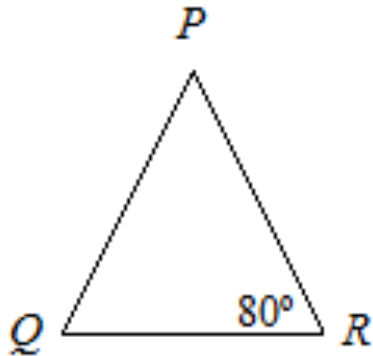
Note:

\* Required

#2. \*

4 points

In  $\triangle PQR$ ,  $\overline{PQ} \cong \overline{PR}$ , and  $m\angle R = 80^\circ$ . Find  $m\angle P$ .



- a.  $20^\circ$
- b.  $80^\circ$
- c.  $160^\circ$
- d.  $100^\circ$

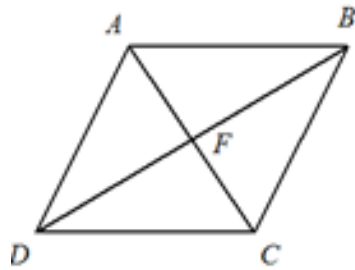
- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.

#16. \*

4 points

A parallelogram is shown below.

Which of the following statements must be true?

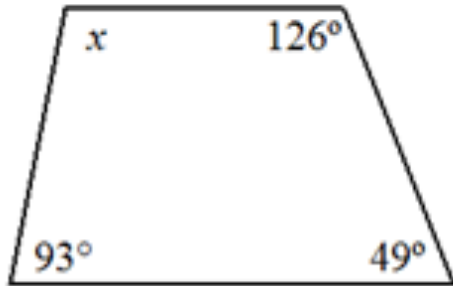


- a.  $\overline{AB} \cong \overline{BC}$
- b.  $\angle BAD \cong \angle DCB$
- c.  $m\angle BCD = 90^\circ$
- d.  $\overline{DF} \cong \overline{AF}$

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.

#5. \*

4 points

Find the value of  $x$ .

- a.  $268^\circ$
- b.  $92^\circ$
- c.  $97^\circ$
- d.  $88^\circ$

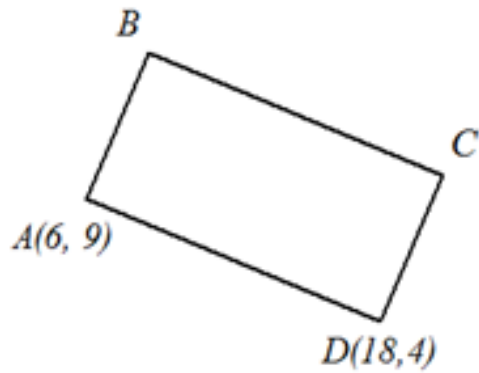
- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.

#15. \*

4 points

$ABCD$  is a rectangle.

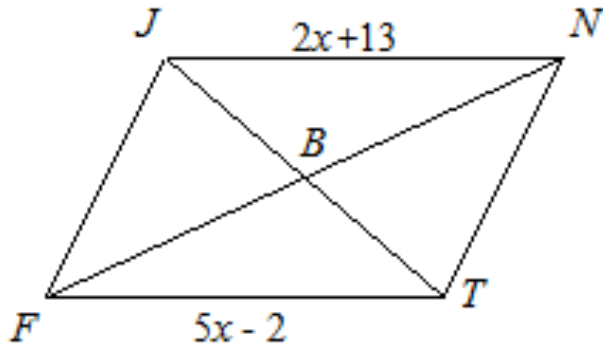
Find the slope of  $\overline{AB}$ .



- a.  $-\frac{5}{12}$
- b.  $\frac{12}{5}$
- c.  $\frac{5}{12}$
- d.  $-\frac{12}{5}$

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.

#24. Find the length of  $FT$ . Type your answer as just a number. Do not type an equation. \* 4 points

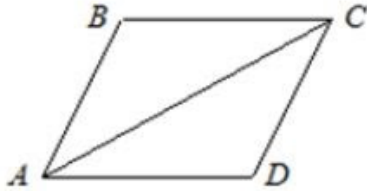


Your answer

#20. What is the reason for step 3? \*

4 points

Use all of this information for questions 19-21.

Given:  $ABCD$  is a parallelogramProve:  $\triangle ABC \cong \triangle CDA$ 

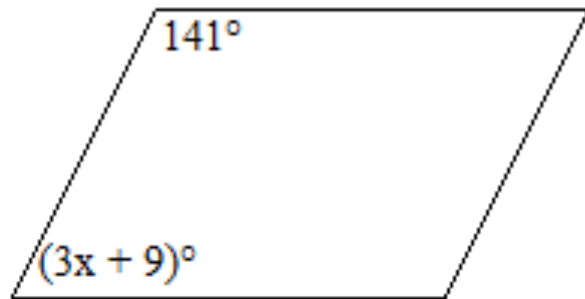
| Statement                                                                               | Reason                                      |
|-----------------------------------------------------------------------------------------|---------------------------------------------|
| 1. $ABCD$ is a parallelogram                                                            | 1. Given                                    |
| 2. $\overline{BC} \parallel \overline{DA}$ ,<br>$\overline{AB} \parallel \overline{CD}$ | 2.                                          |
| 3. $\angle BCA \cong \angle DAC$                                                        | 3.                                          |
| 4.                                                                                      | 4. Alternate Interior Angles Theorem (AIAT) |
| 5. $\overline{AC} \cong \overline{AC}$                                                  | 5. Reflexive Property of Equality (RPE)     |
| 6. $\triangle ABC \cong \triangle CDA$                                                  | 6.                                          |

a. Alternate Interior Angles Theorem (AIAT)c.  $\angle BAC \cong \angle DCA$ e. SAS TCTb. Definition of parallelogramd. ASA TCTf. Vertically Opposite Angles Theorem (VOAT)☐ a.☐ b.☐ c.☐ d.☐ e.☐ f.

#4. \*

4 points

Find the value of  $x$  in the parallelogram below.



- a. 10
- b. 27
- c. 39
- d. 44

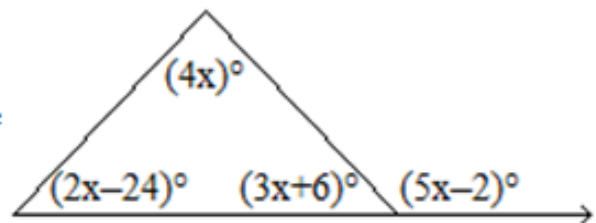
- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.

#22. Type your answer as just a number. Do not type an equation. Do not type the word "degrees" or any symbol for degrees. \*

4 points

Use the diagram below.

Find the measure of the exterior angle (the angle that is outside of the triangle).

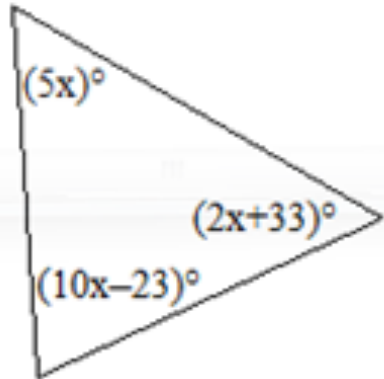


Your answer

#1. \*

4 points

Which of the following is an angle measures in the triangle?



- a.  $60^\circ$
- b.  $65^\circ$
- c.  $77^\circ$
- d.  $82^\circ$

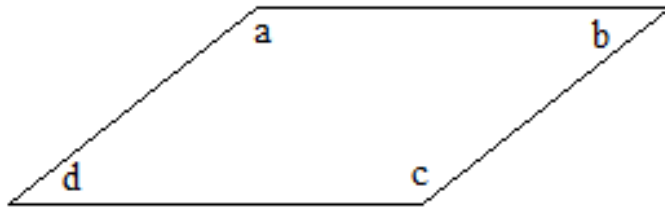
- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.

#7. \*

4 points

Consider the angles in the parallelogram below.

Which of the following is **false**?



a.  $a + c = 180^\circ$

b.  $a = c$

c.  $b = d$

d.  $c + d = 180^\circ$

☐ a.

☐ b.

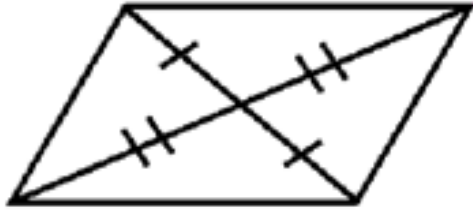
☐ c.

☐ d.

#10. \*

4 points

Which property of a parallelogram is shown by the markings in the diagram below?



- a. diagonals bisect each other
- b. diagonals are congruent
- c. opposite sides are congruent
- d. diagonals are perpendicular

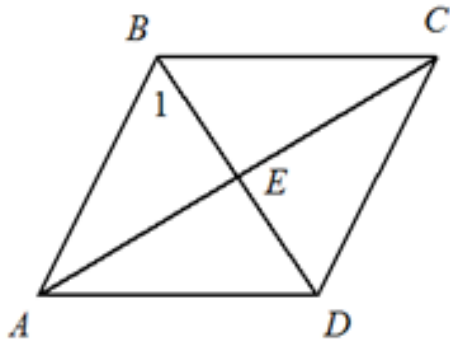
☐ a.☐ b.☐ c.☐ d.

#14. \*

4 points

$ABCD$  is a rhombus.  $m\angle BAD = 70^\circ$ .

What is the measure of  $\angle 1$ ?



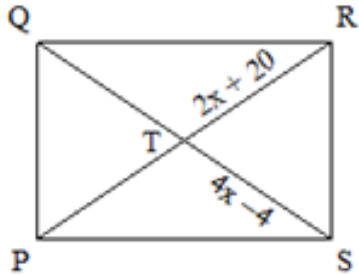
- a.  $70^\circ$
- b.  $20^\circ$
- c.  $55^\circ$
- d.  $35^\circ$

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.

#23. Type your answer as just a number. Do not type an equation. \*

4 points

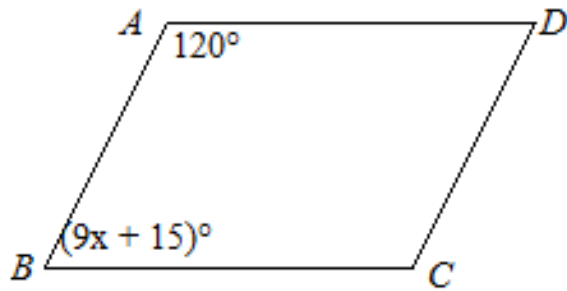
$\overline{PQRS}$  is a rectangle. Find the length of  $\overline{TS}$ ,  
 $\overline{TS} = 4x - 4$  and  $\overline{TR} = 2x + 20$ .



Your answer

#25. Find the value of x. Type your answer as just a number. Do not type an equation. \*

4 points

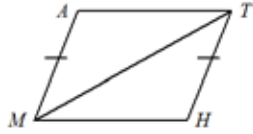
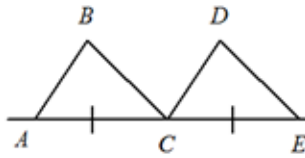
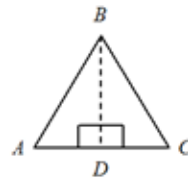
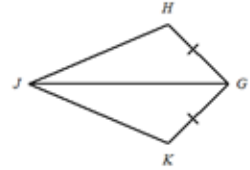


Your answer

#13. \*

4 points

Which of the following diagrams are marked correctly based on the given information?

a.  $\overline{MA} \parallel \overline{TH}$ b.  $C$  is the midpoint of  $\overline{AE}$ c.  $\overline{BD}$  bisects  $\overline{AC}$ .d.  $\overline{JG}$  bisects  $\angle HGK$ ☐ a.☐ b.☐ c.☐ d.

#9. \*

4 points

Use the diagram to answer the question below.

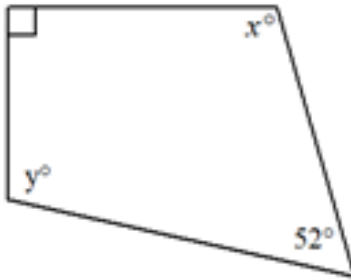
Which of the following are possible values for  $x$  and  $y$ ?

a.  $x = 109$     $y = 119$

b.  $x = 98$     $y = 118$

c.  $x = 102$     $y = 116$

d.  $x = 128$     $y = 128$



☐ a.

☐ b.

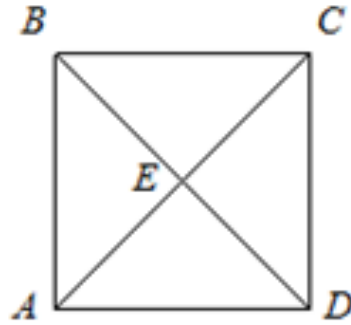
☐ c.

☐ d.

#6. \*

4 points

$ABCD$  is a square with diagonals that intersect at  $E$ . Find the value of  $x$  if  $EB = 6x - 1$  and  $EA = 4x + 8$ .

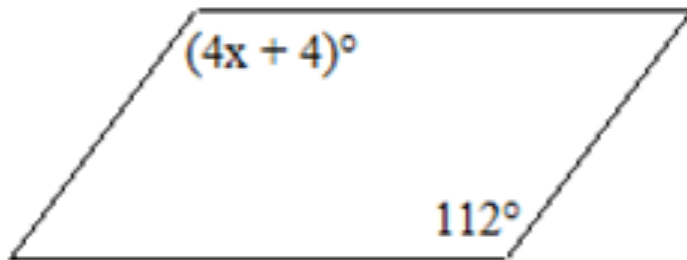


- a.  $\frac{1}{6}$
- b.  $\frac{9}{2}$
- c.  $\frac{173}{10}$
- d. 26

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.

#18. Find the value of  $x$ . Type your answer as just a number. Do not type an equation. \*

4 points



Your answer

#3. \*

4 points

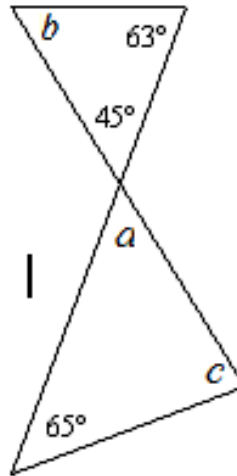
What are  $a$ ,  $b$ , and  $c$ ?

a.  $a = 45^\circ$ ,  $b = 72^\circ$ ,  $c = 70^\circ$

b.  $a = 45^\circ$ ,  $b = 63^\circ$ ,  $c = 65^\circ$

c.  $a = 65^\circ$ ,  $b = 45^\circ$ ,  $c = 50^\circ$

d.  $a = 65^\circ$ ,  $b = 72^\circ$ ,  $c = 50^\circ$

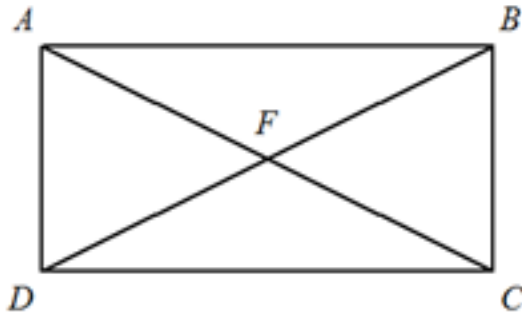
☐ a.☐ b.☐ c.☐ d.

#12. \*

4 points

Rectangle  $ABCD$  has diagonals that intersect at  $F$ .  
 $DF = 10$ ,  $CB = 12$ , and  $CD = 16$ .

Which of the following statements must be false?



- a.  $AC = 20$
- b.  $AD = 16$
- c.  $FC = 10$
- d.  $AB = 16$

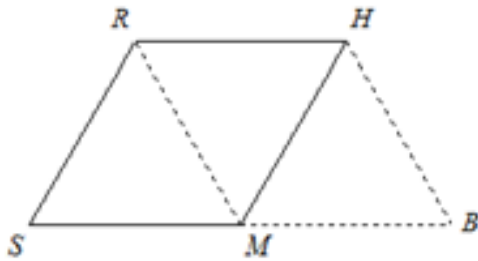
- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.

#11. \*

4 points

Two overlapping rhombi are shown below,  $RHMS$  and  $RHBM$ .

Given that  $m\angle RMH = 60^\circ$  and  $RH = 10$ ,  
find the measure of  $\angle SRH$  and the perimeter of  $\triangle MHB$ .



- a.  $120^\circ$  and 10
- b.  $60^\circ$  and 20
- c.  $120^\circ$  and 30
- d.  $60^\circ$  and 40

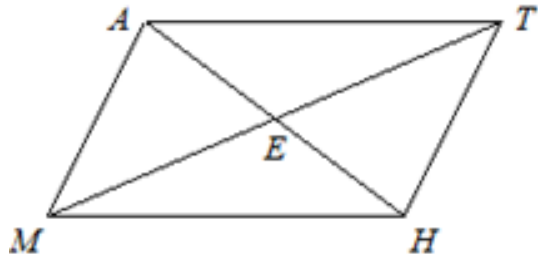
- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.

#8. \*

4 points

Parallelogram  $MATH$  is shown below.

In order to prove  $\overline{AT} \cong \overline{MH}$ , one can show  $\triangle ATE$  is congruent to \_\_\_\_\_.



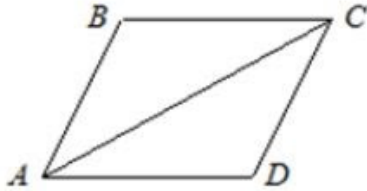
- a.  $\triangle EHT$
- b.  $\triangle HME$
- c.  $\triangle AMH$
- d.  $\triangle THM$

☐ a.☐ b.☐ c.☐ d.

#19. What is the reason for step 2? \*

4 points

Use all of this information for questions 19-21.

Given:  $ABCD$  is a parallelogramProve:  $\triangle ABC \cong \triangle CDA$ 

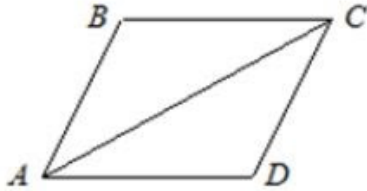
| Statement                                                                               | Reason                                      |
|-----------------------------------------------------------------------------------------|---------------------------------------------|
| 1. $ABCD$ is a parallelogram                                                            | 1. Given                                    |
| 2. $\overline{BC} \parallel \overline{DA}$ ,<br>$\overline{AB} \parallel \overline{CD}$ | 2.                                          |
| 3. $\angle BCA \cong \angle DAC$                                                        | 3.                                          |
| 4.                                                                                      | 4. Alternate Interior Angles Theorem (AIAT) |
| 5. $\overline{AC} \cong \overline{AC}$                                                  | 5. Reflexive Property of Equality (RPE)     |
| 6. $\triangle ABC \cong \triangle CDA$                                                  | 6.                                          |

a. Alternate Interior Angles Theorem (AIAT)c.  $\angle BAC \cong \angle DCA$ e. SAS TCTb. Definition of parallelogramd. ASA TCTf. Vertically Opposite Angles Theorem (VOAT)☐ a.☐ b.☐ c.☐ d.☐ e.☐ f.

#21. What is the reason for step 6? \*

4 points

Use all of this information for questions 19-21.

Given:  $ABCD$  is a parallelogramProve:  $\triangle ABC \cong \triangle CDA$ 

| Statement                                                                               | Reason                                      |
|-----------------------------------------------------------------------------------------|---------------------------------------------|
| 1. $ABCD$ is a parallelogram                                                            | 1. Given                                    |
| 2. $\overline{BC} \parallel \overline{DA}$ ,<br>$\overline{AB} \parallel \overline{CD}$ | 2.                                          |
| 3. $\angle BCA \cong \angle DAC$                                                        | 3.                                          |
| 4.                                                                                      | 4. Alternate Interior Angles Theorem (AIAT) |
| 5. $\overline{AC} \cong \overline{AC}$                                                  | 5. Reflexive Property of Equality (RPE)     |
| 6. $\triangle ABC \cong \triangle CDA$                                                  | 6.                                          |

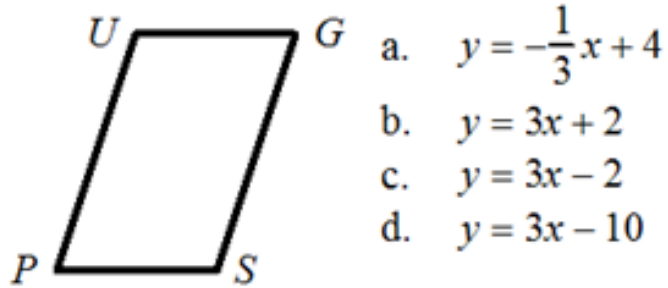
a. Alternate Interior Angles Theorem (AIAT)c.  $\angle BAC \cong \angle DCA$ e. SAS TCTb. Definition of parallelogramd. ASA TCTf. Vertically Opposite Angles Theorem (VOAT)☐ a.☐ b.☐ c.☐ d.☐ e.☐ f.

#17. \*

4 points

*PUGS* is a parallelogram. The equation of line *UP* is  $y = 3x + 4$ .

Find the equation of line *SG* given that the coordinates of *G* are  $(2, 4)$ .

☐ a.☐ b.☐ c.☐ d.

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