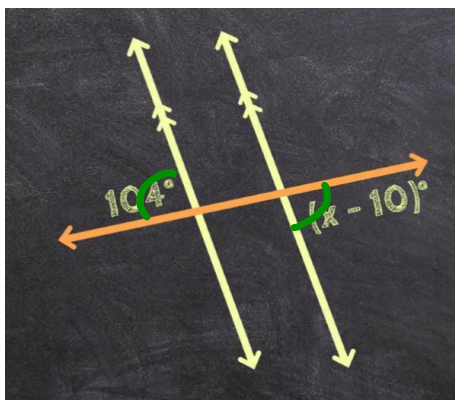


WHITEBOARD REVIEW

Get out cheat sheets!!!

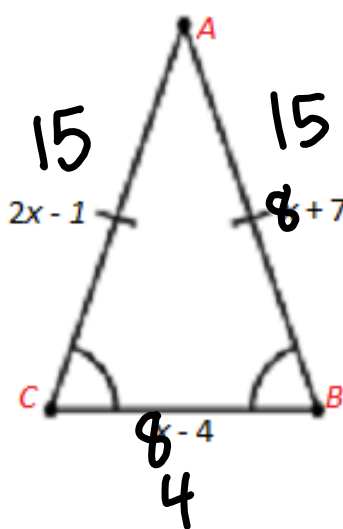
What must x be in order to make the lines parallel?

If $104 = x - 10$
 $x = 114^\circ$
then \parallel



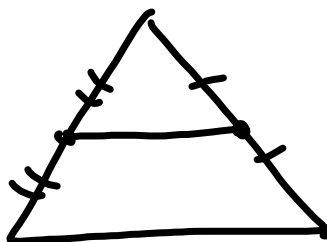
Find the side lengths of the triangle

$$\begin{aligned} 2x-1 &= x+7 \\ -x & \quad -x \\ \hline x-1 &= 7 \\ +1 & \quad +1 \\ \hline x &= 8 \end{aligned}$$



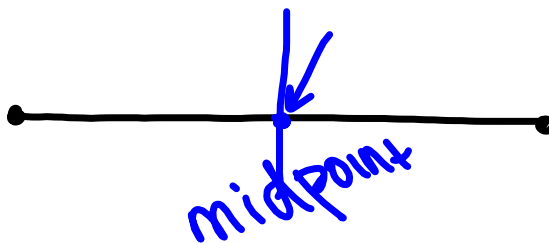
Fill in the blank

A midsegment is // to and
 $\frac{1}{2}$ the length of the third side

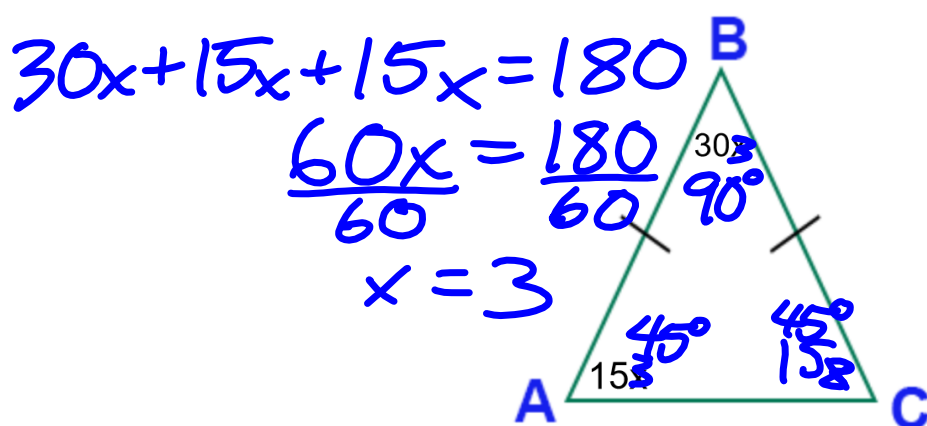


Fill in the blank

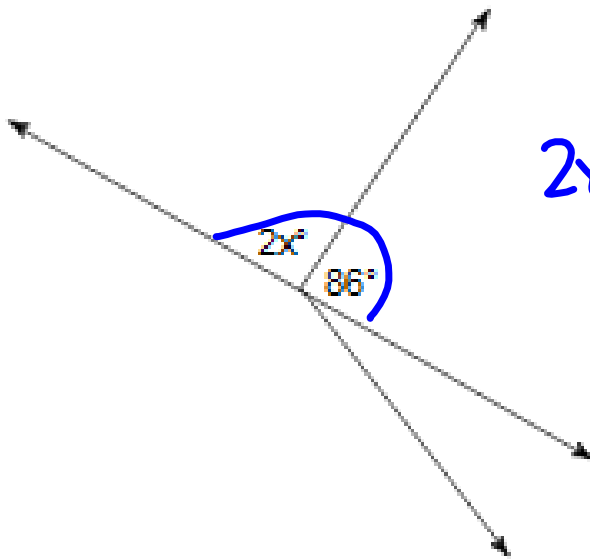
A _____ divides a segment into two equal lengths



Find the measure of each angle of the triangle

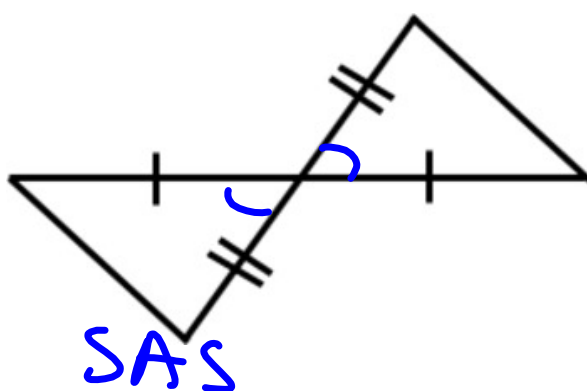


Find the value of x

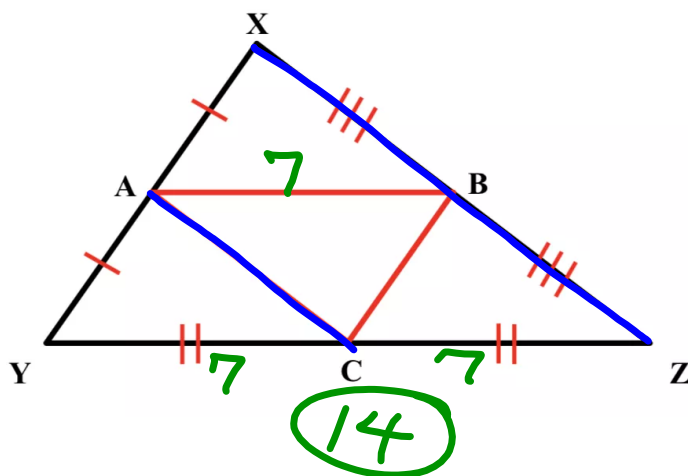


$$\begin{aligned}2x + 86 &= 180 \\ -86 & \quad -86 \\ \hline 2x &= 94 \\ \frac{2x}{2} &= \frac{94}{2} \\ x &= 47\end{aligned}$$

Which theorem proves the triangles are congruent?

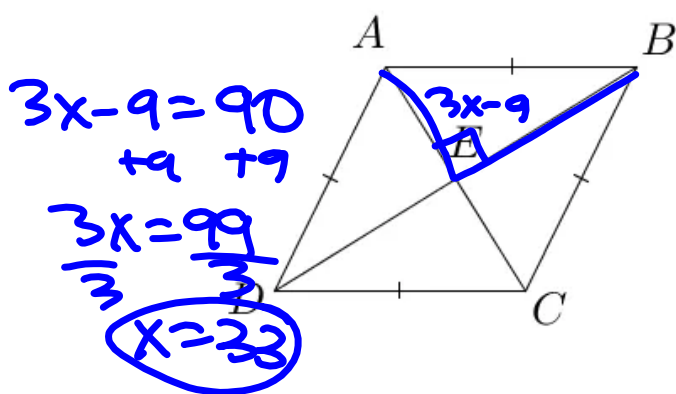


XZ is parallel to AC If $AB = 7$, $YZ = \underline{\hspace{2cm}}$

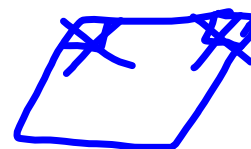
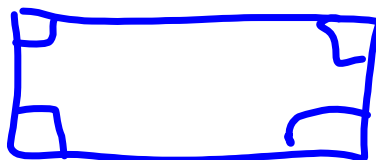
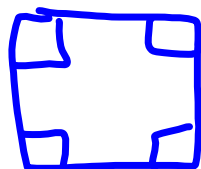


The figure shown is a rhombus

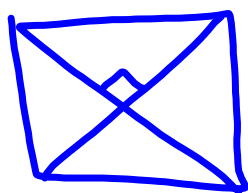
If $m\angle AEB = 3x - 9$, find the value of x



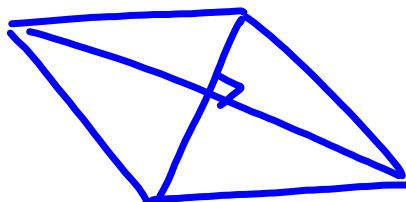
Which quadrilaterals have four 90 degree angles?



Which quadrilaterals have diagonals that intersect at 90 degrees?



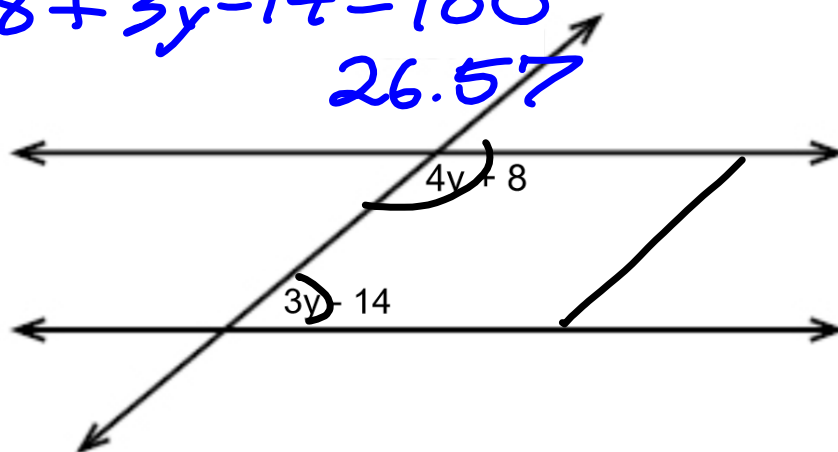
Sq.



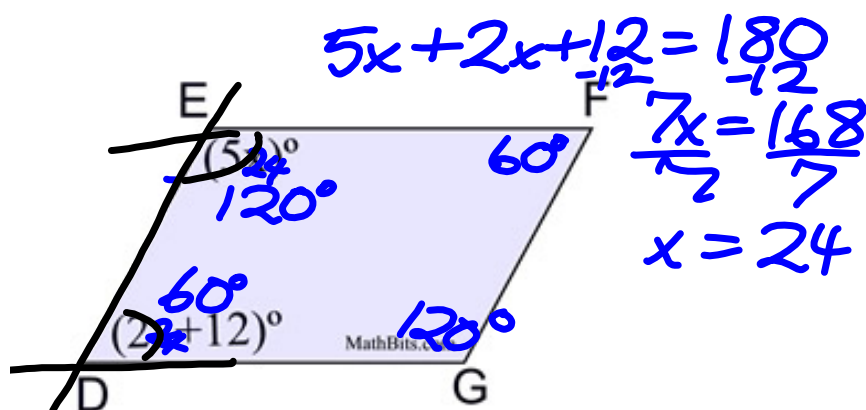
rho.

What must y be in order to make the lines parallel?

$$4y + 8 + 3y - 14 = 180$$
$$26.57$$



Find the value of all four angles in the parallelogram



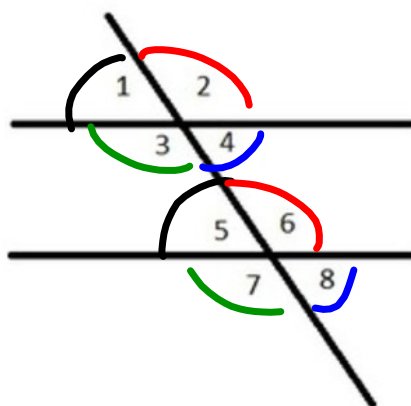
$$\angle D = 60^\circ$$

$$\angle E = 120^\circ$$

$$\angle F = 60^\circ$$

$$\angle G = 120^\circ$$

State all four sets of corresponding angles

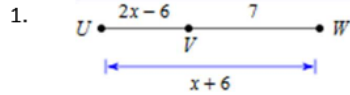


due Thursday

Math 2B Properties and Proofs Review Name: _____

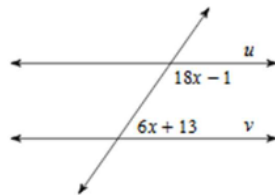
Multiple Choice Practice

Find the value of x , by setting up the correct equation form the given diagram or information.



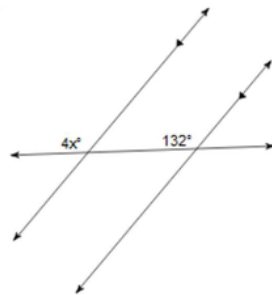
- A) -5
- B) 5
- C) 6
- D) 10

3. to make $u \parallel v$



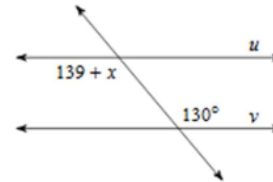
- A) -7
- B) 5
- C) 7
- D) 9

5.



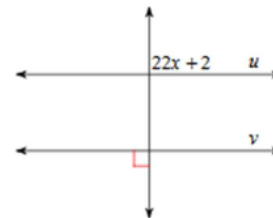
- A) 32
- B) 33
- C) 35
- D) 36

2. to make $u \parallel v$



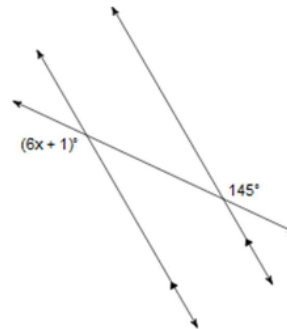
- A) -11
- B) -10
- C) -9
- D) 9

4. to make $u \parallel v$

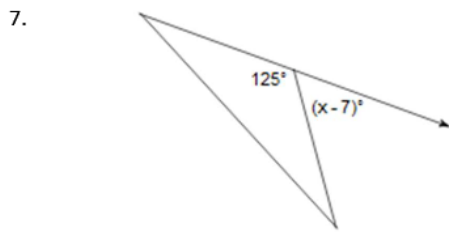


- A) -7
- B) -5
- C) 4
- D) 11

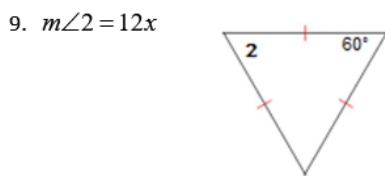
6.



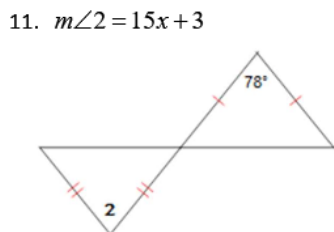
- A) 23
- B) 24
- C) 26
- D) 27



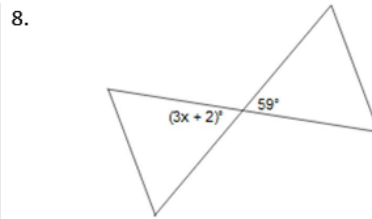
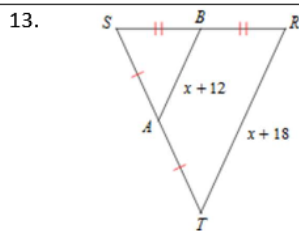
- A) 58
- B) 61
- C) 62
- D) 63



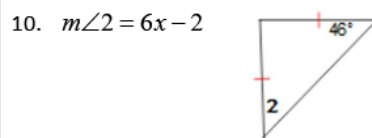
- A) -7
- B) -5
- C) -4
- D) 5



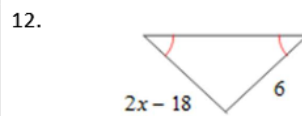
- A) -8
- B) -7
- C) 5
- D) 7



- A) 18
- B) 19
- C) 20
- D) 21



- A) -8
- B) -6
- C) 5
- D) 8



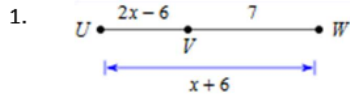
- A) -11
- B) -6
- C) 8
- D) 12

- A) -9
- B) -6
- C) 8
- D) 12

Math 2B Properties and Proofs Review Name: _____

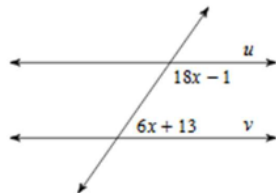
Multiple Choice Practice

Find the value of x , by setting up the correct equation form the given diagram or information.



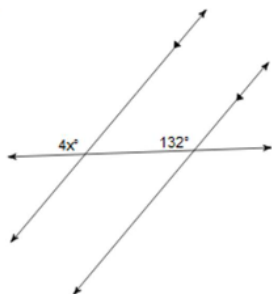
- A) -5
- B) 5
- C) 6
- D) 10

3. to make $u \parallel v$



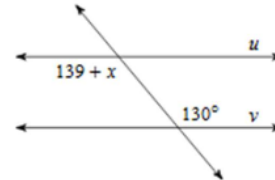
- A) -7
- B) 5
- C) 7
- D) 9

5.



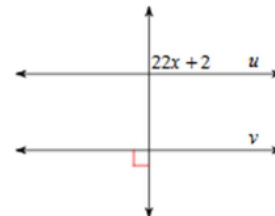
- A) 32
- B) 33
- C) 35
- D) 36

2. to make $u \parallel v$



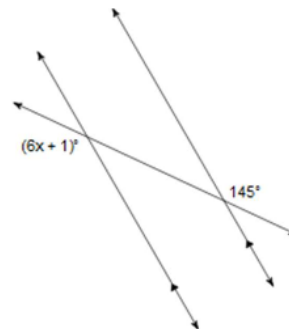
- A) -11
- B) -10
- C) -9
- D) 9

4. to make $u \parallel v$

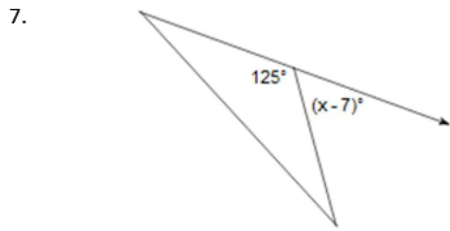


- A) -7
- B) -5
- C) 4
- D) 11

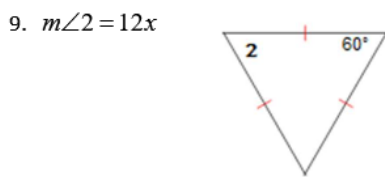
6.



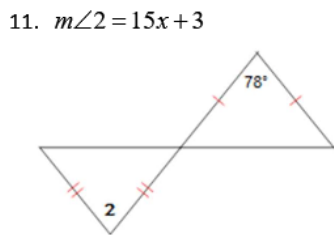
- A) 23
- B) 24
- C) 26
- D) 27



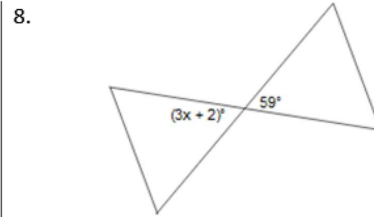
- A) 58
- B) 61
- C) 62
- D) 63



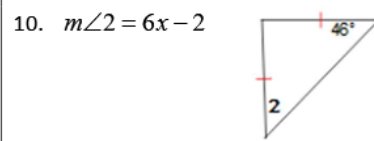
- A) -7
- B) -5
- C) -4
- D) 5



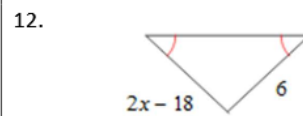
- A) -8
- B) -7
- C) 5
- D) 7



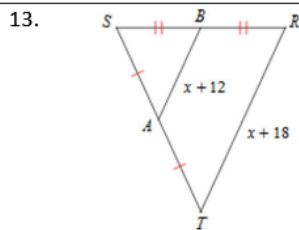
- A) 18
- B) 19
- C) 20
- D) 21



- A) -8
- B) -6
- C) 5
- D) 8



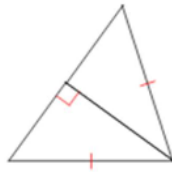
- A) -11
- B) -6
- C) 8
- D) 12



- A) -9
- B) -6
- C) 8
- D) 12

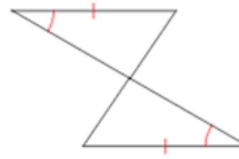
State if the two triangles can be proven congruent. If so, state how you know.

14.



- A) ASA
- B) SSS
- C) HL
- D) not congruent

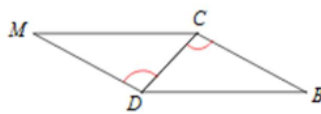
15.



- A) LA
- B) SAS
- C) ASA
- D) AAS

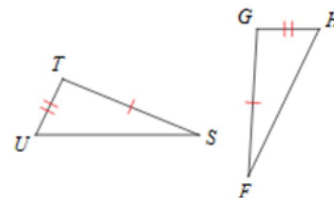
What additional information is needed to show the triangles are congruent for the given postulate or theorem.

16. ASA



- A) $\angle BDC \cong \angle MCD$
- B) $\overline{BD} \cong \overline{MC}$
- C) $\overline{DC} \cong \overline{CD}$ or $\overline{CB} \cong \overline{DM}$
- D) $\angle DCB \cong \angle CDM$

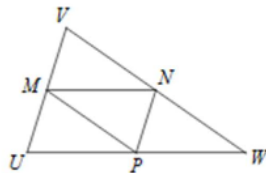
17. SAS



- A) $\overline{TU} \cong \overline{GH}$
- B) $\angle S \cong \angle F$ or $\angle T \cong \angle G$
- C) $\angle T \cong \angle G$
- D) $\overline{ST} \cong \overline{FG}$ or $\overline{US} \cong \overline{HF}$

In the triangle, M , N , and P are the midpoints of the sides. Name a segment parallel to the one given.

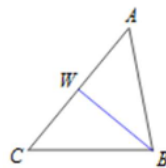
18. $\overline{NP} \parallel$ ___



- A) \overline{MP}
- B) \overline{UV}
- C) \overline{VW}
- D) \overline{UW}

Each figure shows a triangle with one or more of its medians. Find the value of x from the given information

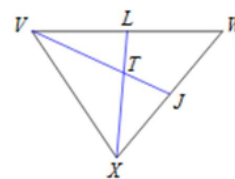
19.



$WC = 2x - 5$ and $WA = x + 3$

- A) 1
- B) 3
- C) 8
- D) 9

20.

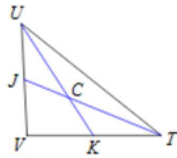


$XT = 3x + 3$ and $TL = 2x - 1$

- A) 10
- B) 9
- C) 5
- D) 3

Each figure shows a triangle with one or more of its medians. Find the value of x from the given information

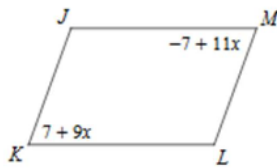
21. $UK = 3x$ and $CK = 2x - 1$



- A) 1
- B) 5
- C) 6
- D) 9

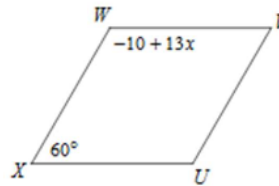
Each figure is a parallelogram. Find the value of x .

22.



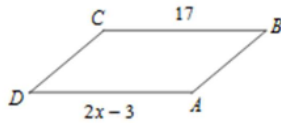
- A) 2
- B) 5
- C) 6
- D) 7

23.



- A) 12
- B) 10
- C) 5
- D) 2

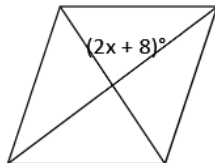
24.



- A) 2
- B) 4
- C) 9
- D) 10

The figure below is a rhombus. Find the value of x .

25.



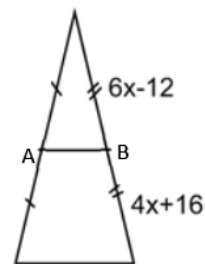
- A) 31
- B) 41
- C) 58
- D) 60

26. Which of these statements are true for all parallelograms?

- A) Diagonals bisect each other.
- B) Diagonals are congruent.
- C) Consecutive angles are congruent.
- D) All sides are congruent.

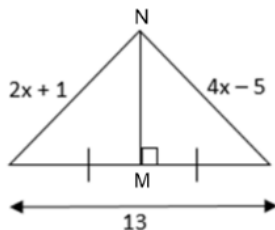
27. Find the value of x that proves AB is a midsegment.

- A) 2
- B) 2.8
- C) 5
- D) 14



28. Given MN is a perpendicular bisector, find the value of x .

- A) -2
- b) 1
- C) 3
- D) 6

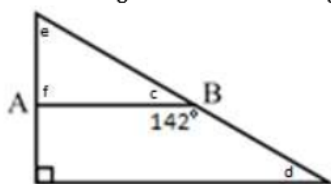


29. What is the relationship between $\angle a$ and $\angle b$.

- A) Complimentary
- B) Congruent
- C) Supplementary
- D) Cannot be determined

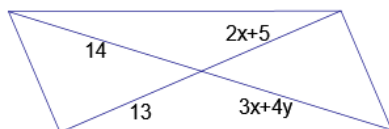


30. Given midsegment AB of the triangle below, find the values of $\angle c$, $\angle d$, $\angle e$ and $\angle f$.



- A) $c = 28^\circ, d = 142^\circ, e = 62^\circ, f = 90^\circ$
- B) $c = 38^\circ, d = 38^\circ, e = 62^\circ, f = 90^\circ$
- C) $c = 38^\circ, d = 38^\circ, e = 52^\circ, f = 90^\circ$
- D) $c = 142^\circ, d = 38^\circ, e = 38^\circ, f = 142^\circ$

31. In the following parallelogram, find the value of Y .



- A) $\frac{1}{2}$
- B) $\frac{1}{3}$
- C) $\frac{1}{4}$
- D) 4

Name the property:

- 32) If $a = b$ and $b = c$ then $a = c$ _____
- 33) $A = A$ _____
- 34) If $a = b$, then $a + c = b + c$ _____
- 35) If $a = b$, then $b = a$ _____
- 36) If two sides of a triangle are congruent, then the angles opposite those sides are congruent _____
- 37) The larger segment is congruent to the sum of the segments that comprise it _____
- 38) Two angles that are adjacent and supplementary are called a _____
- 39) If alternate interior angles are congruent, then the lines are parallel _____
- 40) The exterior angle = the sum of the two remote interior angles _____
- 41) A segment connecting the midpoints of two sides of a triangle is called a _____
- 42) The centroid is _____ the distance from the vertex of a triangle to the midpoint of the opposite side

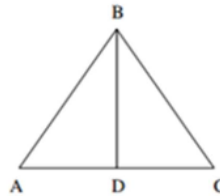
Math 2B Properties and Proofs Review

Free Response - Proof Practice

Complete the following Proofs, by filling in the blanks or by matching, if given options/choices.

1.

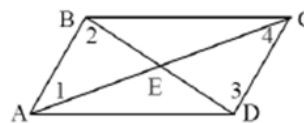
Given: $\triangle ABC$ is isosceles
 \overline{BD} bisects $\angle ABC$
 Prove: $\triangle ABD \cong \triangle CBD$



Statement	Reason
1. $\triangle ABC$ is isosceles	1.
2. $\overline{AB} \cong \overline{CB}$	2.
3. $\angle A \cong \angle C$	3.
4.	4. Given
5.	5. Definition of Angles Bisector
6. $\triangle ABD \cong \triangle CBD$	6.

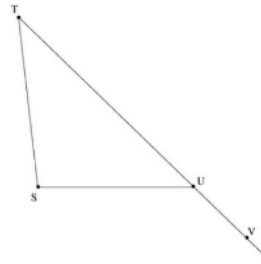
2.

Given: $ABCD$ is a parallelogram
 Proof: \overline{AC} and \overline{BD} bisect each other at E



Statements	Reasons
1. $ABCD$ is a parallelogram	2. Given
3. $\overline{AB} \parallel \overline{DC}$	4.
5. $\angle 1 \cong \angle 4$; $\angle 2 \cong \angle 3$	6.
7. $\overline{AB} \cong \overline{DC}$	8. Opposite sides of a parallelogram are congruent
9. $\triangle \underline{\hspace{1cm}} \cong \triangle \underline{\hspace{1cm}}$	10.
11. $\overline{AE} \cong \overline{CE}$; $\overline{BE} \cong \overline{DE}$	12.
13.	14.

3. Given: $m\angle T = 40^\circ$
 $m\angle SUV = 145^\circ$
 Prove: $m\angle S = 105^\circ$

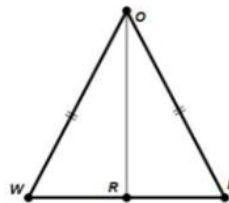


Statements	Reasons
1.	Given
$m\angle SUV = 145^\circ$	2.
3.	Exterior Angles Theorem
4.	Substitution Property of Equality
$m\angle s = 105^\circ$	5.

Possible Choices to fill in the above Proof

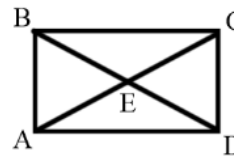
Statements	Reasons
A. $m\angle SUV = 145^\circ$	A. Subtraction Property of Equality
B. $m\angle SUT + m\angle UTS = 180^\circ$	B. Given
C. $145^\circ = m\angle S + 40^\circ$	C. Definition of Linear Pairs
D. $m\angle SUV = m\angle S + m\angle T$	D. Vertical Angles are Congruent
E. $m\angle T = 40^\circ$	E. Substitution Property of Equality

4. Given: $\triangle WOK$ is isosceles
 R is the midpoint of \overline{WK}
 Prove: $\angle OWR \cong \angle OKR$



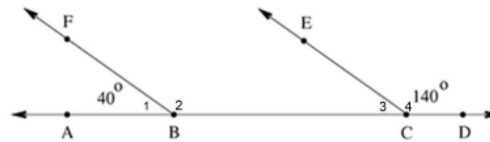
Statement	Reason
1. $\triangle WOK$ is isosceles	1. Given
2.	2. Definition of an isosceles Triangle
3. R is the midpoint of \overline{WK}	3.
4. $\overline{WR} \cong \overline{KR}$	4.
5.	5. Reflexive Property of Congruence
6. $\triangle WRO \cong \triangle KRO$	6.
7. $\angle OWR \cong \angle OKR$	7.

5. Given: $ABCD$ is a rectangle
 $AC = 6x - 15$
 $BD = x + 25$
 Prove: $x = 8$



Statement	Reason
1. $ABCD$ is a rectangle	1. Given
2.	2. The diagonals of a rectangle are congruent
3. $AC = BD$	3.
4. $AC = 6x - 15, BD = x + 25$	4.
5.	5. Substitution
6.	6.
7.	7.
8.	8.

6. Given: Line $ABCD$
 $\angle 1$ and $\angle 4$ are supplementary
 Prove: $\overrightarrow{BF} \parallel \overrightarrow{CE}$



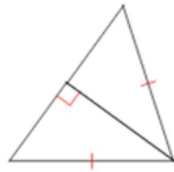
Statement	Reason
1.	Given
$\angle 1$ and $\angle 4$ are supplementary	2.
3.	Definition of Supplementary \angle 's
$\angle 1$ and $\angle FBC$ are supplementary	4.
5.	Definition of Supplementary \angle 's
$m\angle 4 + m\angle 1 = m\angle 1 + m\angle FBC$	6.
$m\angle 4 = m\angle FBC$	7.
8.	Definition of \cong
$\overrightarrow{BF} \parallel \overrightarrow{CE}$	9.

Possible Choices to fill in the above Proof

Statements	Reasons
A. $m\angle FBC = 140^\circ$	A. if corresponding \angle 's \cong , then lines \parallel
B. $m\angle 1 + m\angle FBC = 180^\circ$	B. Given
C. $\angle 4 \cong \angle FBC$	C. Definition of Linear Pairs
D. $m\angle DCB = m\angle 1 + m\angle FBC$	D. Vertical Angles are Congruent
E. $m\angle 4 + m\angle 1 = 180^\circ$	E. Substitution Property of Equality
F. $m\angle 1 = m\angle 4$	F. if same side interior \angle 's are supplementary, then lines \parallel
G. \overrightarrow{AD}	G. Subtraction Property of Equality

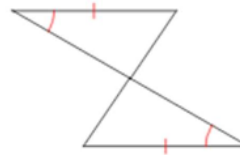
State if the two triangles can be proven congruent. If so, state how you know.

14.



- A) ASA
- B) SSS
- C) HL
- D) not congruent

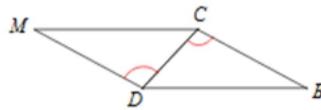
15.



- A) LA
- B) SAS
- C) ASA
- D) AAS

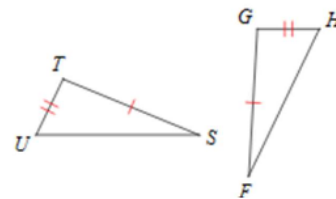
What additional information is needed to show the triangles are congruent for the given postulate or theorem.

16. ASA



- A) $\angle BDC \cong \angle MCD$
- B) $\overline{BD} \cong \overline{MC}$
- C) $\overline{DC} \cong \overline{CD}$ or $\overline{CB} \cong \overline{DM}$
- D) $\angle DCB \cong \angle CDM$

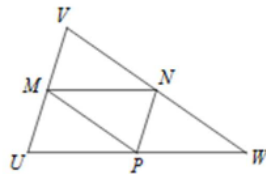
17. SAS



- A) $\overline{TU} \cong \overline{GH}$
- B) $\angle S \cong \angle F$ or $\angle T \cong \angle G$
- C) $\angle T \cong \angle G$
- D) $\overline{ST} \cong \overline{FG}$ or $\overline{US} \cong \overline{HF}$

In the triangle, M , N , and P are the midpoints of the sides. Name a segment parallel to the one given.

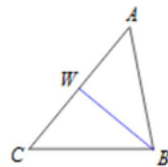
18. $\overline{NP} \parallel$ ___



- A) \overline{MP}
- B) \overline{UV}
- C) \overline{VW}
- D) \overline{UW}

Each figure shows a triangle with one or more of its medians. Find the value of x from the given information

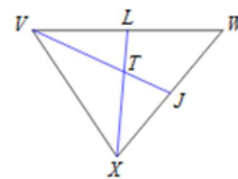
19.



$WC = 2x - 5$ and $WA = x + 3$

- A) 1
- B) 3
- C) 8
- D) 9

20.

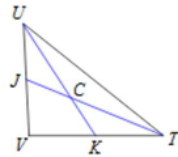


$XT = 3x + 3$ and $TL = 2x - 1$

- A) 10
- B) 9
- C) 5
- D) 3

Each figure shows a triangle with one or more of its medians. Find the value of x from the given information

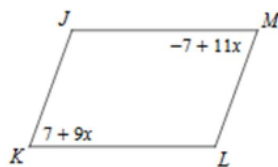
21. $UK = 3x$ and $CK = 2x - 1$



- A) 1
- B) 5
- C) 6
- D) 9

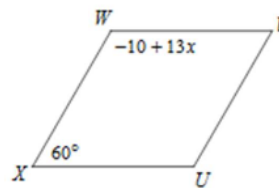
Each figure is a parallelogram. Find the value of x .

22.



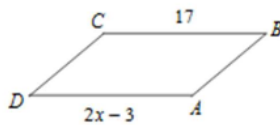
- A) 2
- B) 5
- C) 6
- D) 7

23.



- A) 12
- B) 10
- C) 5
- D) 2

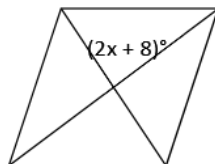
24.



- A) 2
- B) 4
- C) 9
- D) 10

The figure below is a rhombus. Find the value of x .

25.



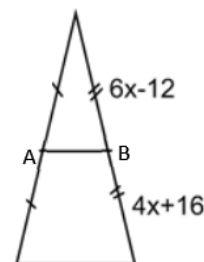
- A) 31
- B) 41
- C) 58
- D) 60

26. Which of these statements are true for all parallelograms?

- A) Diagonals bisect each other.
- B) Diagonals are congruent.
- C) Consecutive angles are congruent.
- D) All sides are congruent.

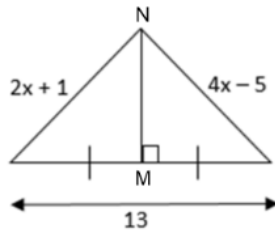
27. Find the value of x that proves AB is a midsegment.

- A) 2
- B) 2.8
- C) 5
- D) 14



28. Given MN is a perpendicular bisector, find the value of x .

- A) -2
- b) 1
- C) 3
- D) 6

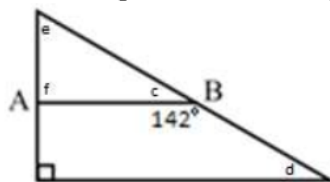


29. What is the relationship between $\angle a$ and $\angle b$.

- A) Complimentary
- B) Congruent
- C) Supplementary
- D) Cannot be determined



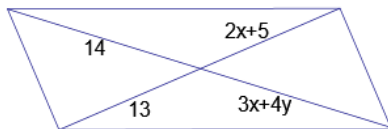
30. Given midsegment AB of the triangle below, find the values of $\angle c$, $\angle d$, $\angle e$ and $\angle f$.



- A) $c = 28^\circ, d = 142^\circ, e = 62^\circ, f = 90^\circ$
- B) $c = 38^\circ, d = 38^\circ, e = 62^\circ, f = 90^\circ$
- C) $c = 38^\circ, d = 38^\circ, e = 52^\circ, f = 90^\circ$
- D) $c = 142^\circ, d = 38^\circ, e = 38^\circ, f = 142^\circ$

31. In the following parallelogram, find the value of Y .

- A) $\frac{1}{2}$
- B) $\frac{1}{3}$
- C) $\frac{1}{4}$
- D) 4



Name the property:

- 32) If $a = b$ and $b = c$ then $a = c$ _____
- 33) $A = A$ _____
- 34) If $a = b$, then $a + c = b + c$ _____
- 35) If $a = b$, then $b = a$ _____
- 36) If two sides of a triangle are congruent, then the angles opposite those sides are congruent _____
- 37) The larger segment is congruent to the sum of the segments that comprise it _____
- 38) Two angles that are adjacent and supplementary are called a _____
- 39) If alternate interior angles are congruent, then the lines are parallel _____
- 40) The exterior angle = the sum of the two remote interior angles _____
- 41) A segment connecting the midpoints of two sides of a triangle is called a _____
- 42) The centroid is _____ the distance from the vertex of a triangle to the midpoint of the opposite side

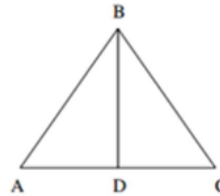
Math 2B Properties and Proofs Review

Free Response - Proof Practice

Complete the following Proofs, by filling in the blanks or by matching, if given options/choices.

1.

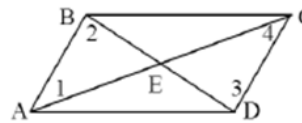
Given: $\triangle ABC$ is isosceles
 \overline{BD} bisects $\angle ABC$
 Prove: $\triangle ABD \cong \triangle CBD$



Statement	Reason
1. $\triangle ABC$ is isosceles	1.
2. $\overline{AB} \cong \overline{CB}$	2.
3. $\angle A \cong \angle C$	3.
4.	4. Given
5.	5. Definition of Angles Bisector
6. $\triangle ABD \cong \triangle CBD$	6.

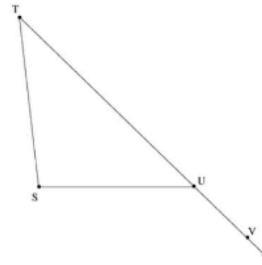
2.

Given: $ABCD$ is a parallelogram
 Proof: \overline{AC} and \overline{BD} bisect each other at E



Statements	Reasons
1. $ABCD$ is a parallelogram	2. Given
3. $\overline{AB} \parallel \overline{DC}$	4.
5. $\angle 1 \cong \angle 4; \angle 2 \cong \angle 3$	6.
7. $\overline{AB} \cong \overline{DC}$	8. Opposite sides of a parallelogram are congruent
9. $\triangle _____ \cong \triangle _____$	10.
11. $\overline{AE} \cong \overline{CE}; \overline{BE} \cong \overline{DE}$	12.
13.	14.

3. Given: $m\angle T = 40^\circ$
 $m\angle SUV = 145^\circ$
 Prove: $m\angle S = 105^\circ$

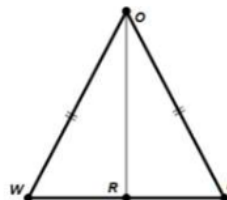


Statements	Reasons
1.	Given
$m\angle SUV = 145^\circ$	2.
3.	Exterior Angles Theorem
4.	Substitution Property of Equality
$m\angle s = 105^\circ$	5.

Possible Choices to fill in the above Proof

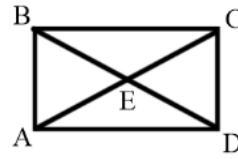
Statements	Reasons
A. $m\angle SUV = 145^\circ$	A. Subtraction Property of Equality
B. $m\angle SUT + m\angle UTS = 180^\circ$	B. Given
C. $145^\circ = m\angle S + 40^\circ$	C. Definition of Linear Pairs
D. $m\angle SUV = m\angle S + m\angle T$	D. Vertical Angles are Congruent
E. $m\angle T = 40^\circ$	E. Substitution Property of Equality

4. Given: $\triangle WOK$ is isosceles
 R is the midpoint of \overline{WK}
 Prove: $\angle OWR \cong \angle OKR$



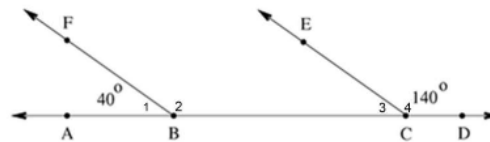
Statement	Reason
1. $\triangle WOK$ is isosceles	1. Given
2.	2. Definition of an isosceles Triangle
3. R is the midpoint of \overline{WK}	3.
4. $\overline{WR} \cong \overline{KR}$	4.
5.	5. Reflexive Property of Congruence
6. $\triangle WRO \cong \triangle KRO$	6.
7. $\angle OWR \cong \angle OKR$	7.

5. Given: $ABCD$ is a rectangle
 $AC = 6x - 15$
 $BD = x + 25$
 Prove: $x = 8$



Statement	Reason
1. $ABCD$ is a rectangle	1. Given
2.	2. The diagonals of a rectangle are congruent
3. $AC = BD$	3.
4. $AC = 6x - 15, BD = x + 25$	4.
5.	5. Substitution
6.	6.
7.	7.
8.	8.

6. Given: Line $ABCD$
 $\angle 1$ and $\angle 4$ are supplementary
 Prove: $\overline{BF} \parallel \overline{CE}$



Statement	Reason
1.	Given
$\angle 1$ and $\angle 4$ are supplementary	2.
3.	Definition of Supplementary \angle 's
$\angle 1$ and $\angle FBC$ are supplementary	4.
5.	Definition of Supplementary \angle 's
$m\angle 4 + m\angle 1 = m\angle 1 + m\angle FBC$	6.
$m\angle 4 = m\angle FBC$	7.
8.	Definition of \cong
$\overline{BF} \parallel \overline{CE}$	9.

Possible Choices to fill in the above Proof

Statements	Reasons
A. $m\angle FBC = 140^\circ$	A. if corresponding \angle 's \cong , then lines \parallel
B. $m\angle 1 + m\angle FBC = 180^\circ$	B. Given
C. $\angle 4 \cong \angle FBC$	C. Definition of Linear Pairs
D. $m\angle DCB = m\angle 1 + m\angle FBC$	D. Vertical Angles are Congruent
E. $m\angle 4 + m\angle 1 = 180^\circ$	E. Substitution Property of Equality
F. $m\angle 1 = m\angle 4$	F. if same side interior \angle 's are supplementary, then lines \parallel
G. \overline{AD}	G. Subtraction Property of Equality