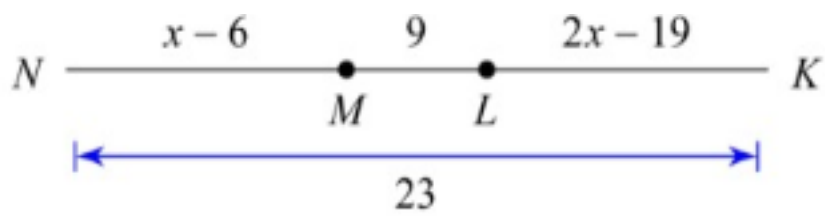


## WHITEBOARD REVIEW

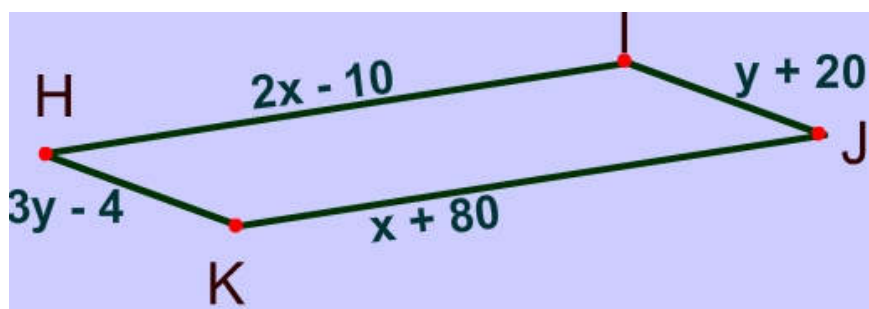
Get out cheat sheets

Get out Proofs Review

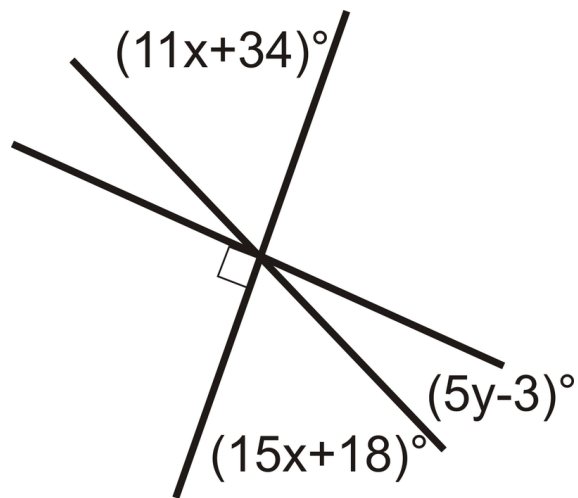
Solve for  $x$



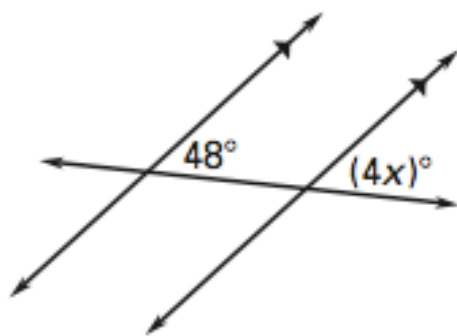
Find the length of all 4 sides of the parallelogram



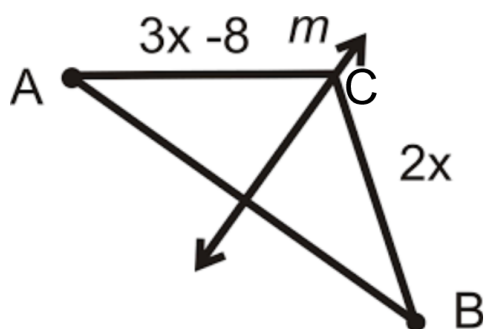
Solve for x



Solve for x



line  $m$  is the perpendicular bisector of triangle  $ABC$   
Find the lengths of  $AB$  and  $AC$

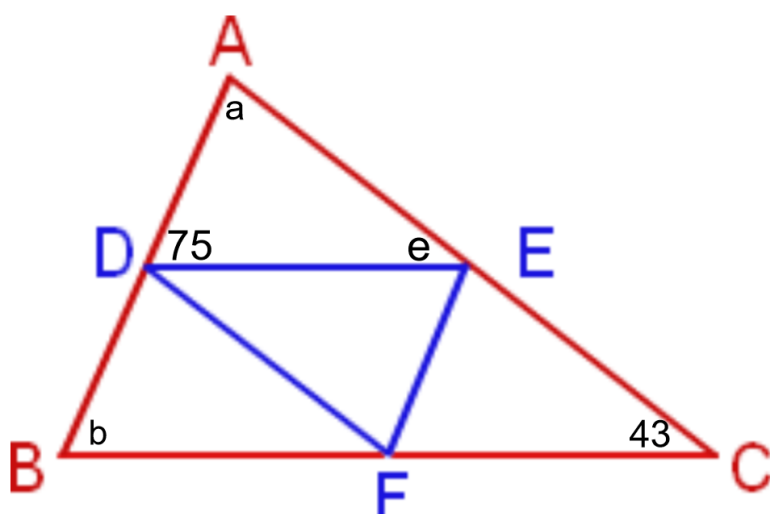


$$AB =$$

$$AC =$$

DE is a midsegment

Find a, b and e



NH and MG are medians in triangle LMN  
If  $MT = 3x$  and  $MG = 3x + 6$ , find the value of  $x$





NH and MG are medians in triangle LMN  
MH = 24 and HL =  $3x - 3$ . Solve for x

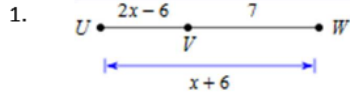


Get out cheat sheets  
Get out Proofs Review

**Math 2B Properties and Proofs Review** Name: \_\_\_\_\_

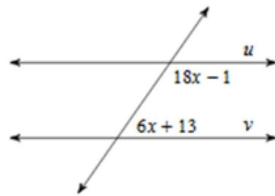
**Multiple Choice Practice**

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



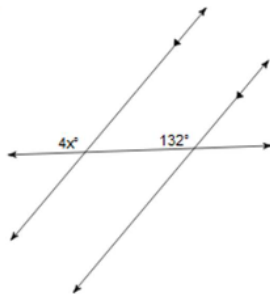
- A) -5
- B) 5
- C) 6
- D) 10

3. to make  $u \parallel v$



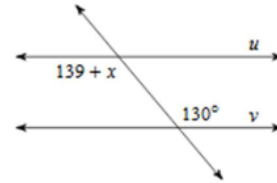
- A) -7
- B) 5
- C) 7
- D) 9

5.



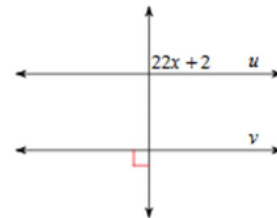
- A) 32
- B) 33
- C) 35
- D) 36

2. to make  $u \parallel v$



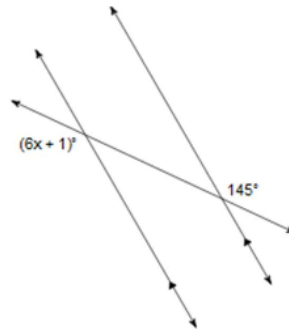
- A) -11
- B) -10
- C) -9
- D) 9

4. to make  $u \parallel v$

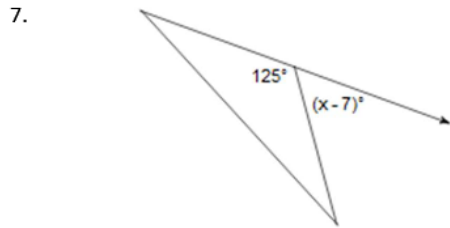


- A) -7
- B) -5
- C) 4
- D) 11

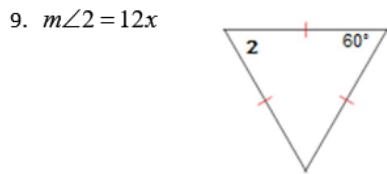
6.



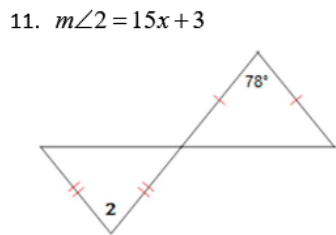
- A) 23
- B) 24
- C) 26
- D) 27



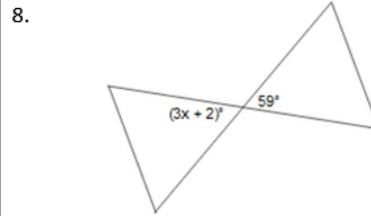
- A) 58
- B) 61
- C) 62
- D) 63



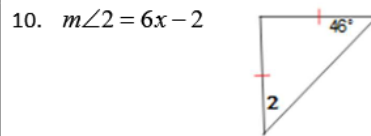
- A) -7
- B) -5
- C) -4
- D) 5



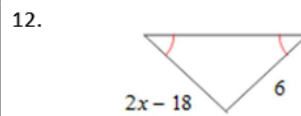
- A) -8
- B) -7
- C) 5
- D) 7



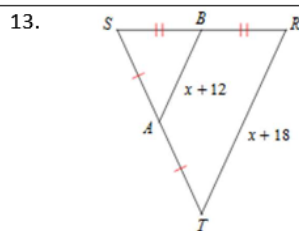
- A) 18
- B) 19
- C) 20
- D) 21



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



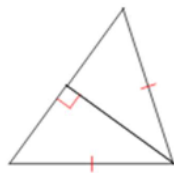
- A) -11
- B) -6
- C) 8
- D) 12



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

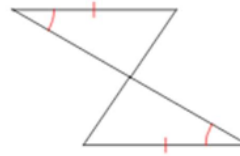
State if the two triangles can be proven congruent. If so, state how you know.

14.



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

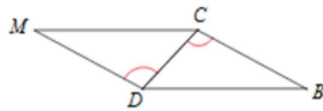
15.



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

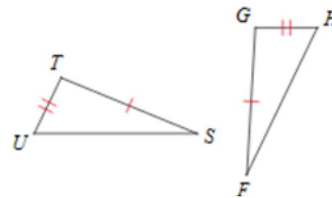
What additional information is needed to show the triangles are congruent for the given postulate or theorem.

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)  $\angle DCB \cong \angle CDM$

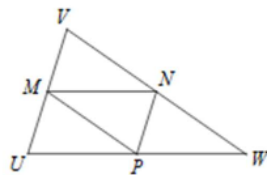
17. SAS



- 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.

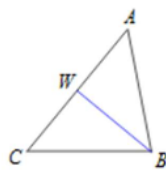
18.  $\overline{NP} \parallel$  \_\_\_



- 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

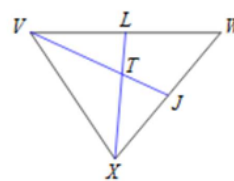
19.



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

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

20.

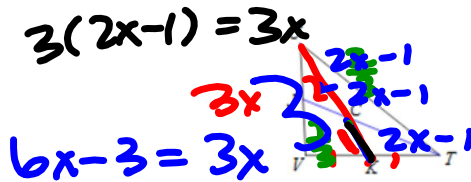


$XT = 3x + 3$  and  $TL = 2x - 1$

- 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

$$2x - 1 = \frac{1}{3}(3x)$$

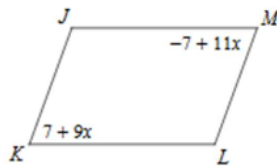
$$2x - 1 = \frac{x}{2}$$

$$\frac{1}{2} = \frac{1}{2}x$$

$$1 = x$$

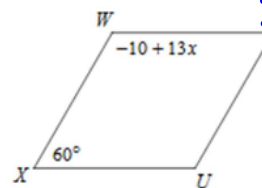
Each figure is a parallelogram. Find the value of  $x$ .

22.



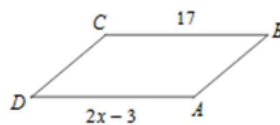
- A) 2
- B) 5
- C) 6
- D) 7

23.



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

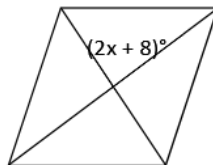
24.



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

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

25.



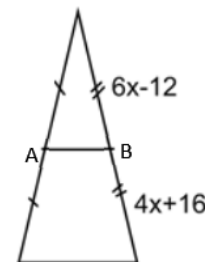
- A) 31
- B) 41
- C) 58
- D) 60

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.

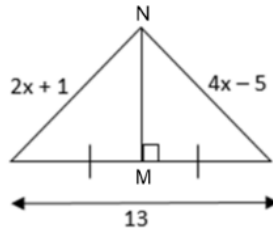
27. Find the value of  $x$  that proves  $AB$  is a midsegment.

- 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

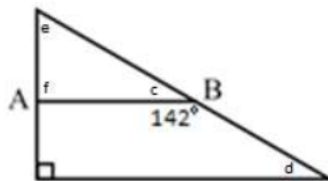


29. What is the relationship between  $\angle a$  and  $\angle b$ .

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

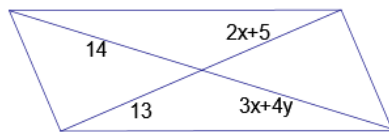


30. Given midsegment  $AB$  of the triangle below, find the values of  $\angle c$ ,  $\angle d$ ,  $\angle e$  and  $\angle f$ .



- 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

# Questions on Proofs???

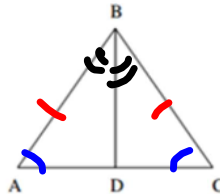
## Math 2B Properties and Proofs Review

### 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:  $\triangle ABD \cong \triangle CBD$



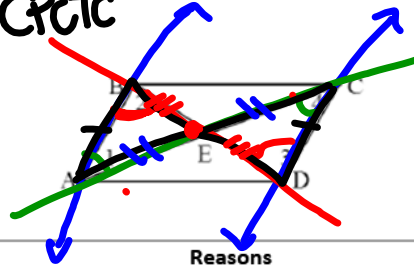
Statement	Reason
1. $\triangle ABC$ is isosceles	1. Given
2. $\overline{AB} \cong \overline{CB}$	2. Definition of Isos. $\triangle$
3. $\angle A \cong \angle C$	3. Isosceles $\triangle$ Thm
4. $\overline{BD}$ bisects $\angle ABC$	4. Given
5. $\angle ABD \cong \angle CBD$	5. Definition of Angles Bisector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

$\overline{AD} \cong \overline{CD}$

CPCTC

2.

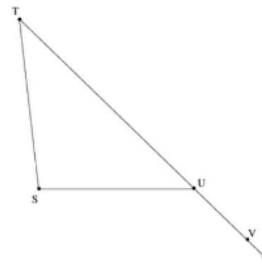
Given:  $ABCD$  is a parallelogram  
 Proof:  $\overline{AC}$  and  $\overline{BD}$  bisect each other at  $E$



Statements	Reasons
1. $ABCD$ is a parallelogram	2. Given
3. $\overline{AB} \parallel \overline{DC}$	4. Def'n of $\square$
5. $\angle 1 \cong \angle 4$ ; $\angle 2 \cong \angle 3$	6. Alternat Int $\angle$ s are $\cong$
7. $\overline{AB} \cong \overline{DC}$	8. Opposite sides of a parallelogram are congruent
9. $\triangle AEB \cong \triangle CED$	10. ASA
11. $\overline{AE} \cong \overline{CE}$ ; $\overline{BE} \cong \overline{DE}$	12. CPCTC
13. $\overline{AC}$ & $\overline{BD}$ bisect @ $E$	14. Definition of Bisector



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

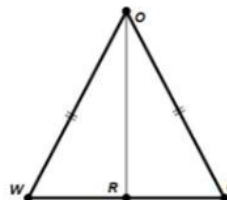


Statements	Reasons
1.	Given
$m\angle SUV = 145^\circ$	2.
3.	Exterior Angles Theorem
4.	Substitution Property of Equality
$m\angle s = 105^\circ$	5.

Possible Choices to fill in the above Proof

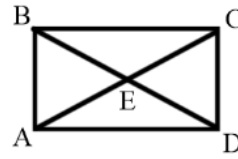
Statements	Reasons
A. $m\angle SUV = 145^\circ$	A. Subtraction Property of Equality
B. $m\angle SUT + m\angle UTS = 180^\circ$	B. Given
C. $145^\circ = m\angle S + 40^\circ$	C. Definition of Linear Pairs
D. $m\angle SUV = m\angle S + m\angle T$	D. Vertical Angles are Congruent
E. $m\angle T = 40^\circ$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

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



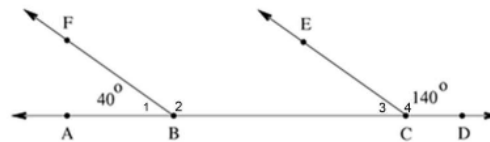
Statement	Reason
1. $\triangle WOK$ is isosceles	1. Given
2.	2. Definition of an isosceles Triangle
3. $R$ is the midpoint of $\overline{WK}$	3.
4. $\overline{WR} \cong \overline{KR}$	4.
5.	5. Reflexive Property of Congruence
6. $\triangle WRO \cong \triangle KRO$	6.
7. $\angle OWR \cong \angle OKR$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

