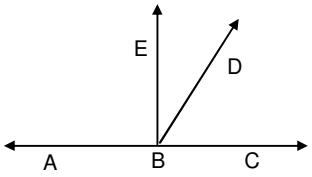
Geometry TEST Name _____
Mid Term

Put each answer in the blank provided. All answers must be written correctly (that is with symbols when needed). Show all work in the space provided.

1. Write the letter(s) of the statement(s) that CAN be concluded from the diagram.

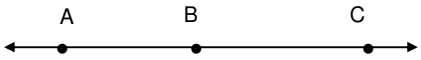
a) $\angle ABC$ is a straight angle
b) $\angle DBC$ is an acute angle
c) $\angle CBE \cong \angle EBA$
d) AB = BC
e) $\angle EBC$ is a right angle.
f) A, B and D are coplanar.



1. _____

2. Given the diagram, if AB = 3x + 6, BC = 12 and AC = 6x –3 find the following:

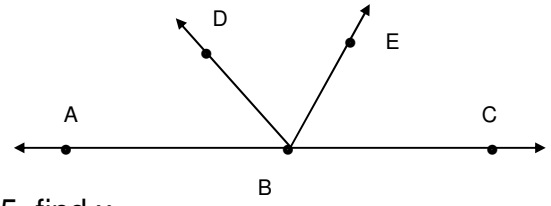
a) x = _____



b) AB = _____

c) Is B the midpoint of AC? (yes or no) _____

3. Given $\overrightarrow{BD}$ bisects $\angle ABE$.



a) If $m\angle ABD = 2x+1$ and $m\angle DBE = 45$, find x. a) _____

b) if $m\angle ABD = 3x$ and $m\angle EBC = 5x+4$ find $m\angle DBE$. b) _____

4. If a polygon has 11 sides, find the sum of the interior angles.

_____

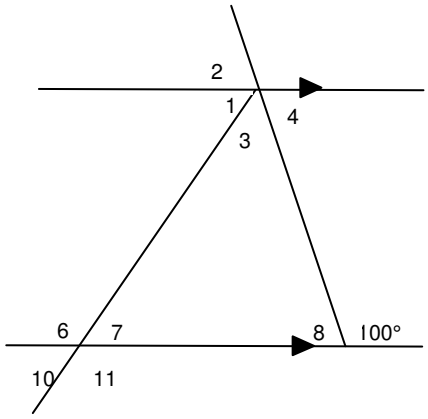
5. If a regular polygon has 36 sides, find each interior angle.

_____

6. Fill in the following chart completely.

Number of sides	4			
Each Interior ∠		171		170
Each Exterior ∠			3	

7. Find the measures of the labeled angles. **∠1 ≅∠3**



m∠1 = _____

m∠2 = _____

m∠3 = _____

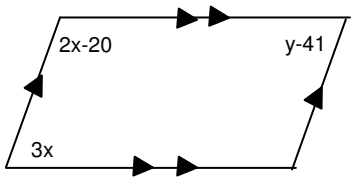
m∠4 = _____

m∠5 = _____

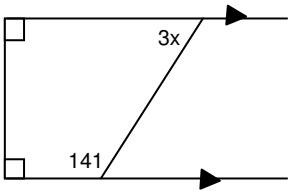
m∠6 = _____

m∠7 = _____ m∠8 = _____ m∠10 = _____ m∠11 = _____

8.



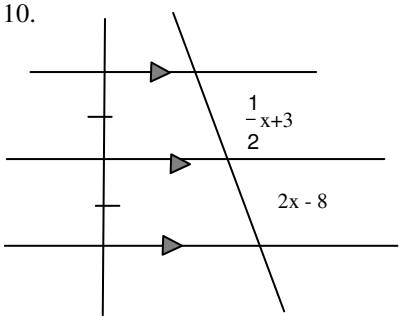
9.



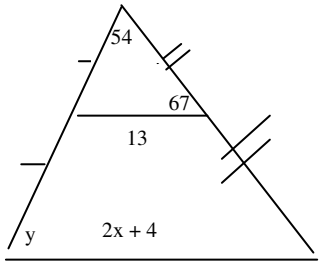
x = _____ y = _____

x = _____

10.

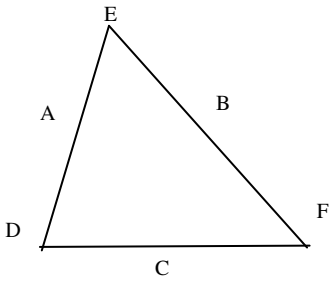


11.



For 12-14, A, B and C are midpoints of DE, EF and $\overline{FD}$. $\overline{Fill}$ in the blanks (2 points each)

12. If DF= 24 then CD = _____ and AB = _____.



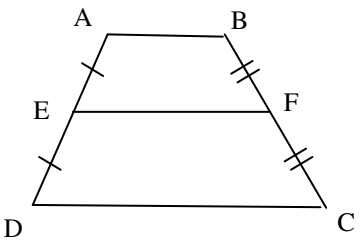
13. If BC = 42622, then ED = _____,

14. If the perimeter of ΔABC = 26, then the perimeter of

Δ DEF = _____.

Show all work in the space provided. No improper fractions!!

15. Solve for x:



a) AB = 42
EF = x
DC = 56

x = _____

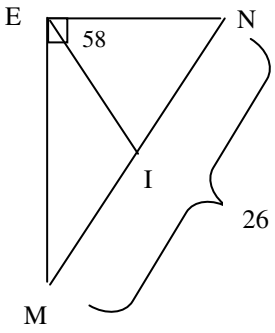
b) AB = 2x
EF = 2x +1
DC = 15

x = _____

c) AB = 7x + 2
EF = 5x
DC = 4x - 7

x = _____

16. Given the figure, fill in the blanks. I is a midpoint of the hypotenuse. (2 points each)



IN = _____

EI = _____

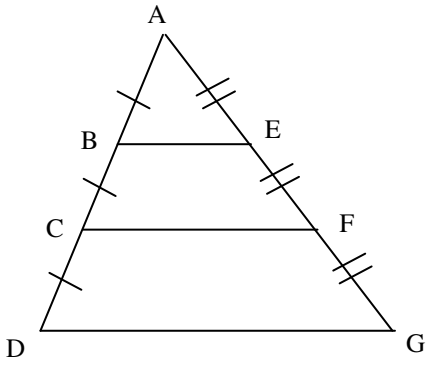
m∠N = _____

m∠EIM = _____

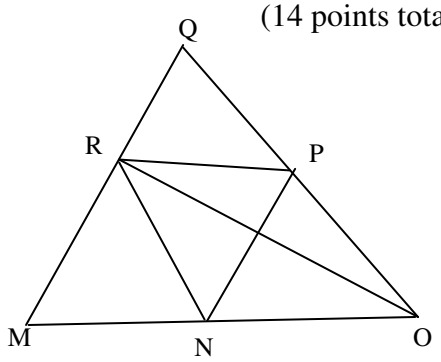
m∠M = _____

17. Fill in the following:

(a) If BE =12 then CF = _____ and DG = _____



18. P and N are midpoints, OR is an **Altitude**, RM = 6 (14 points total)
RQ = 4, QO = 18, and RN = 10



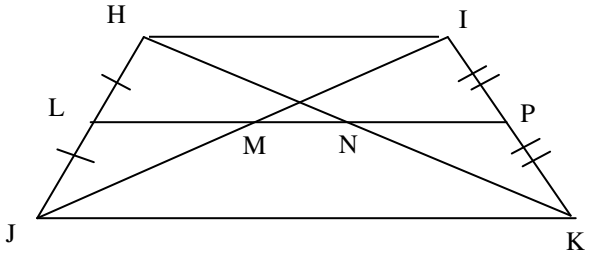
PN = _____ PR = _____ MO = _____

Perimeter of ΔMOQ = _____ Perimeter of ΔNPR = _____

19. Fill ins (15 points total)

a) If HI = 16 and JK = 24, then LM = _____

NP = _____ and MN = _____

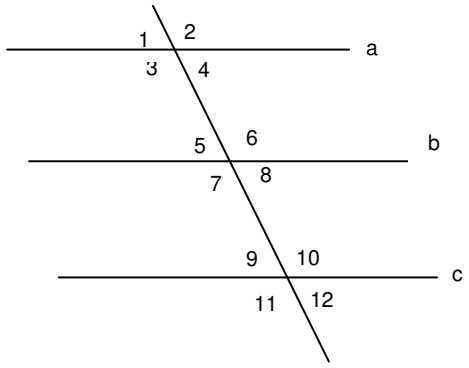


b) If HI = 6x, JK = 18x + 4 and MN = 5 then x = _____ and HI = _____

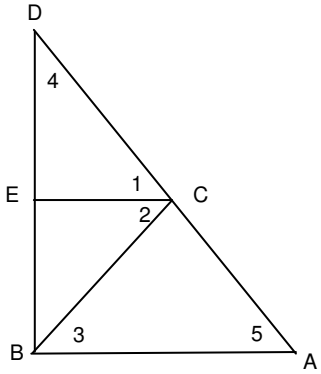
Proofs:

1. Given $a \parallel b$ and $\angle 5 \cong \angle 12$

   Prove: $\angle 1 \cong \angle 12$



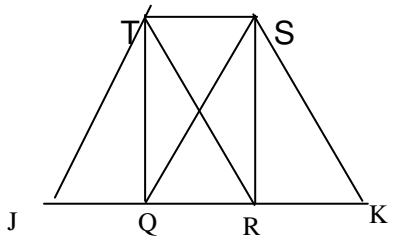
2.



Given: $\angle 5 \cong \angle 2$; $\overrightarrow{CE}$ bisects $\angle DCB$

Prove: $\overline{EC} \parallel \overline{AB}$

3. Proof:
Given: Rectangle QRST, $\overline{RT} \parallel \overline{SK}$,
ΔQSK is isosceles (QK is base)
Prove RKST is $\square$



Answers:

1. A, F
2. a) 7 b) 27 c) no
3. a) 22 b) 48
4. 1620
5. 170
6. Row 1- 4, 40 120 36
   Row 2- 90, 171, 177, 170
   Row 3- 90, 9, 3, 10
7. 50,80,50,80, (no angle 5), 130,50,80,50,130
8. x=40 y=161
9. x=47
10. x= 22/3
11. x=11 y=59
12. cd=12 ab=12
13. 85244
14. 52
15. a) 49 b) 6.5 c) 5
16. IN= 13 EI= 13, angle N=58, angle EIM=136 , angle M=22
17. a) CF=24 DG=36
18. PN=12 PR=9 MO=20 Perimeter of MOQ=62, Perimeter of NPR=31
19. a) LM=8, NP=8, MN=4 b) x=1/2 HI=3

Proofs

1. Given	Given
1=5	PCAC
9=12	VAT
5=9	Trans
1=12	Trans

2.	Given	Given
	1=2	Def angle Bisector
	1=5	Trans
	EC parallel to AB	CACP

3.	Given	Given
	QS=SK	Def Iso Triangle
	TR=SQ	Diag of rectangle congruent
	SK=TR	Transitive
	RKST is a parallelogram	One pair opp sides congruent and parallel