Name: Key Date: _____ Hour: _____

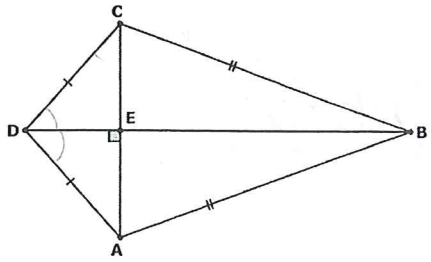
# ACC Geo: Kites and Trapezoids Proofs & Practice

1.) Use Kite ABCD

**Given**: DC=DA, CB=AB, <DEC=90°

**Prove**: m<CDE=m<ADE

Same proof as # 2 in notes... basically.




2.) Use Kite ABCD

**Given**: DC=DA, CB=AB, <DEC=90°

**Prove**: CE=EA

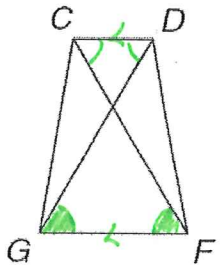
Some type of proof as # 2 in notes

$\Delta DEC \cong \Delta DEA$ by HL

$CE = EA$ cpctc

3.) **Given**: CDFG is an isosceles trapezoid with bases CD and FG.

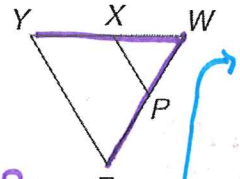
**Prove**: m<DGF=m<CFG




| | |
|---|---|
| 1. | 1. given |
| 2. $CG \cong DF$ | 2. def of isosc trap. |
| 3. $CF \cong DG$ | 3. diags of isosc trap. $\cong$ |
| 4. $GF \cong GF$ | 4. reflexive |
| 5. $\Delta DGF \cong \Delta CFG$ | 5. SSS |
| 6. $\angle DGF \cong \angle CFG$ | 6. cpctc |

4.) **Given**: ZYXP is an isosceles trapezoid.

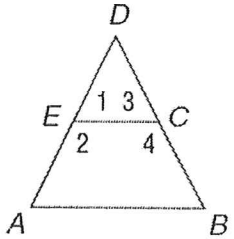
**Prove**: ΔPWX is isosceles.




| | |
|---|---|
| 1. | 1. given |
| 2. $YX \cong PZ$ | 2. def of isos. trap. |
| 3. $\angle Y \cong \angle Z$ | 3. base <s of isos. trap. $\cong$ |
| 4. $YW \cong ZW$ | 4. $\cong$ base <s form isosc Δ. ($\cong \angle \Rightarrow$ op. $\cong$ sides) |
| 5. $YW = YX + XW$, $ZW = PZ + WP$ | 5. Segment addition |
| 6. $YX + XW = PZ + WP$ | 6. Substitution |
| 7. $PZ + XW = PZ + WP$ | 7. substitution |
| 8. $XW = WP$ | 8. subtraction |
| 9. ΔPWX is isosc. | 9. def of isosceles Δ |

5.) **Given**: E is the midpoint of AD and C is the midpoint of DB. AD=DB and m<A=m<1.

**Prove**: ABCE is an isosceles trapezoid.




| | |
|---|---|
| 1. | 1. given |
| 2. $EC \parallel AB$ | 2. $\cong$ corr. <s form $\parallel$ |
| 3. $\frac{1}{2}AD = \frac{1}{2}BD$ | 3. multiplication |
| 4. $EA = CB$ | 4. midpt |
| 5. ABCE is isosc. trap. | 5. def of isosc. trapezoid |

Name: Key

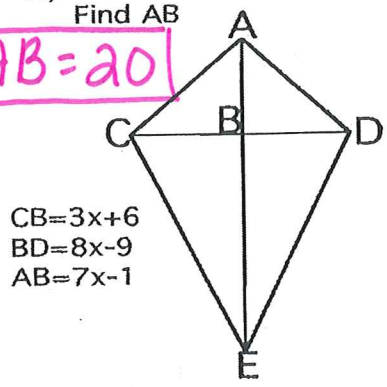
# Kites and Trapezoids Worksheet

Chap:Quads

Assign: 3 to C

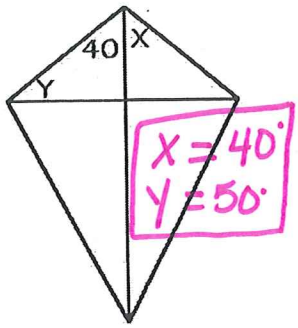
1.) Given Kite ADEC
Find AB

AB = 20



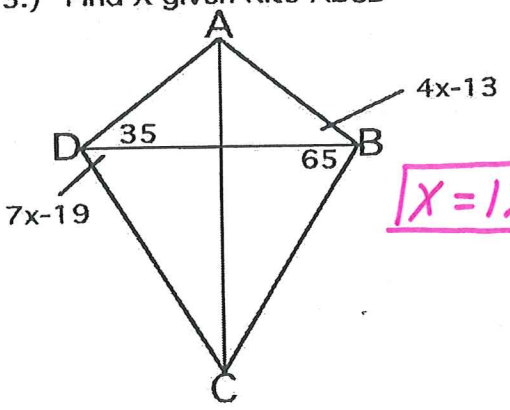

CB=3x+6
BD=8x-9
AB=7x-1

2.) Given Kite ABCD
Find X and Y



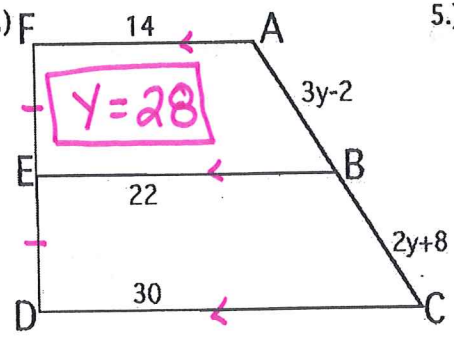

X = 40°
Y = 50°

3.) Find X given Kite ABCD



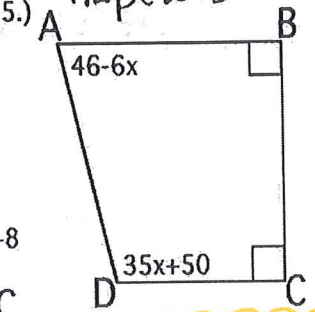

X = 12

4.)



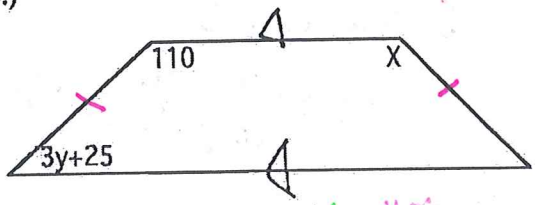

Find AB

5.) Trapezoid ABCD




Find m<D = 151.4°

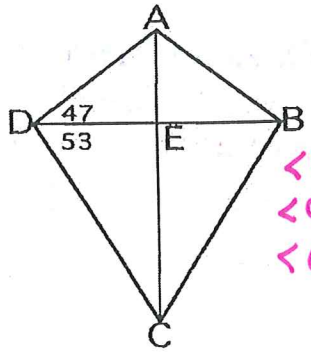
6.)




Find X and Y

X = 110°
y = 15

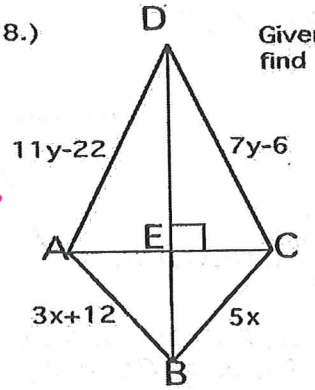
7.) Given Kite ABCD




Find m<ABC
m<CED
m<CEB

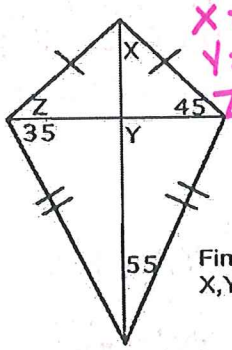
<ABC = 100°
<CED = 90°
<CEB = 90°

8.) Given Kite DCBA
find AD and CB




x = 6
y = 4

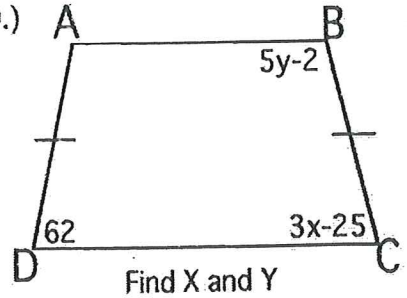
9.)




Find X,Y,Z

X = 45°
Y = 90°
Z = 45°

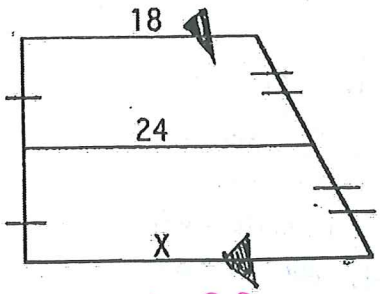
10.)



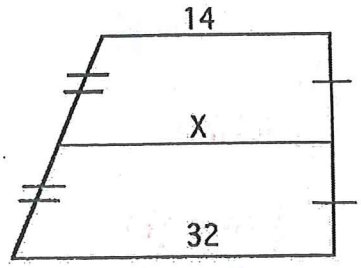

Find X and Y

x = 29
y = 24

11.)




X = 30




X = 23