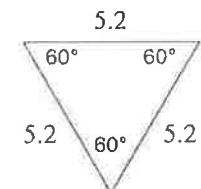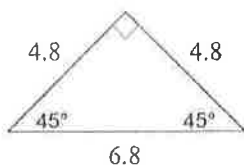Name: _Koea_ Date: _____ Block: _____

Geometry -- Chapter 5 Test Review

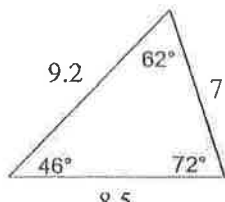**5.1 Angle Relationships in Triangles**

1. List all Triangle Classifications for Angle Measures: _acute_ , _obtuse_ , _right_ , _equiangular_

2. List all Triangle Classifications by Side Lengths: _scalene, isosceles, equilateral_

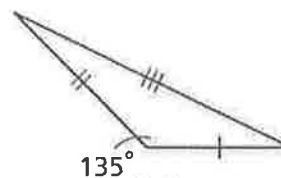3. Classify each triangle by angle measures and side lengths.
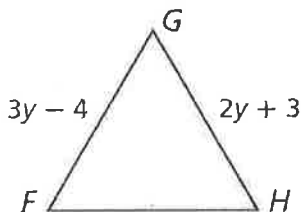

equiangular
equilateral

right
isosceles

acute
scalene

obtuse
scalene

4. Given equilateral triangle FGH, find the length of FH.
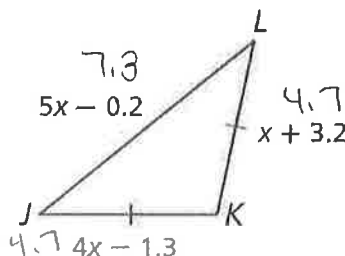

$3y - 4 = 2y + 3$
$-2y \quad -2y$
$y - 4 = 3$
$y = 7$

$3(7) - 4$
$\boxed{FH = 17}$

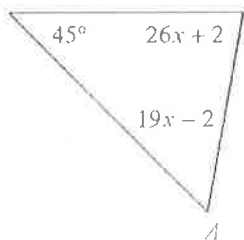5. Find the perimeter of the triangle.

$4x - 1.3 = x + 3.2$
$3x = 4.5$
$x = 1.5$

$7.3 + 2(4.7) = \boxed{16.7 \text{ units}}$

6. All angles inside a triangle add up to equal: _____

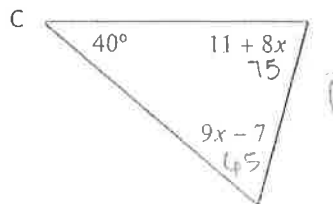7. Find the measure of Angle A.

$45 + 26x + 2 + 19x - 2 = 180$
$45x + 45 = 180$
$45x = 135$

$19(3) - 2 = 55 \quad x = 3$
$\boxed{m\angle A = 55°}$

8. List the angles in order from least to greatest.

$\boxed{C, A, B}$
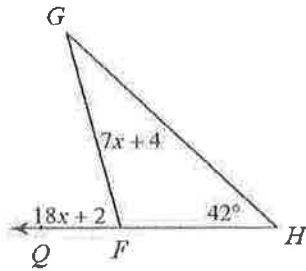
$40 + 11 + 8x + 9x - 7 = 180$
$17x + 44 = 180$
$17x = 136$
$x = 8$

9a. Find the measure of angle G.

$42 + 7x + 4 = 18x + 2$
$7x + 46 = 18x + 2$
$\quad\quad\quad -7x$
_____
$46 = 11x + 2$
$-2 \quad\quad -2$
$44 = 11x$
$x = 4$

$7(4) + 4$
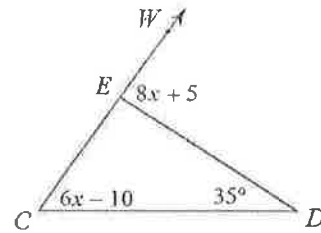$28 + 4$

$\boxed{m\angle G = 32°}$

5.2 Congruent Triangles

9b. Find the measure of angle WED.

$6x - 10 + 35 = 8x + 5$
$6x + 25 = 8x + 5$
$20 = 2x$
$x = 10$

$8(10) + 5$

$\boxed{m\angle WED = 85°}$

Given: $\triangle JKL \cong \triangle DEF$. Identify the congruent corresponding parts.

10. $\overline{KL} \cong$ ___?___
EF

11. $\overline{DF} \cong$ ___?___
JL

12. $\angle K \cong$ ___?___
$\angle E$

13. $\angle F \cong$ ___?___
$\angle L$

Given: $\triangle PQR \cong \triangle STU$. Find each value.

14. PQ
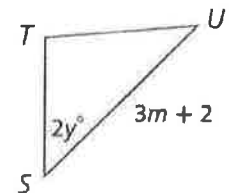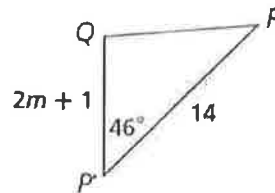
$3m + 2 = 14$
$3m = 12$
$m = 4$

$2(4) + 1 = 9$

$\boxed{PQ = 9}$
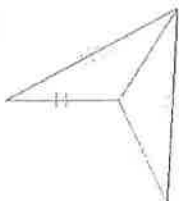
15. y

$46 = 2y$

$\boxed{y = 23}$

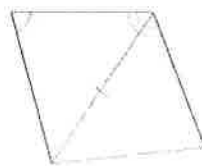**5.3, 5.5, 5.6, 5.7 – (SAS, SSS, HL, ASA, AAS, and CPCTC)**

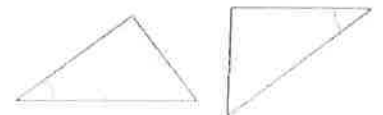16. If possible ,tell which shortcut will prove the two triangles are congruent? If not possible, list NA.
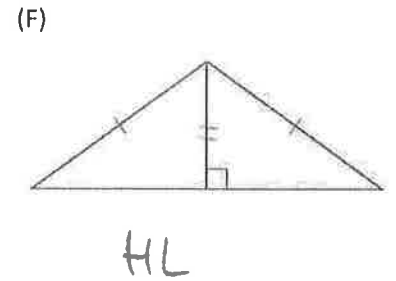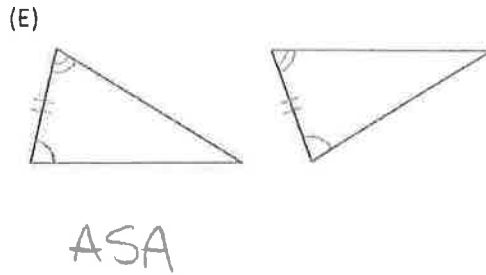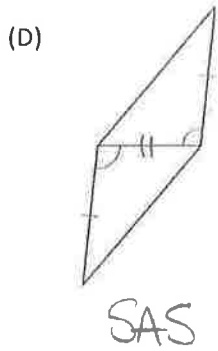
(A)

SSS

(B)

AAS

(C)

NA

(16 Continued...Which shortcut proves the triangles are congruent??)

(D)

SAS

(E)

ASA

(F)

HL

17. State what extra info is needed to prove the triangles are congruent by the given shortcut.

(A)   SAS

W

U

B

A

C

WB ≅ CB

(B)   SSS

T

M

K

L

TK ≅ LK

(C)   AAS

U

W

V

T

R

4WVAAR LV ≅ LT

(D)   AAS

C

D

R

T

E

∠C ≅ ∠R

(E)   ASA

R

P

Q

I

K

∠R ≅ ∠K
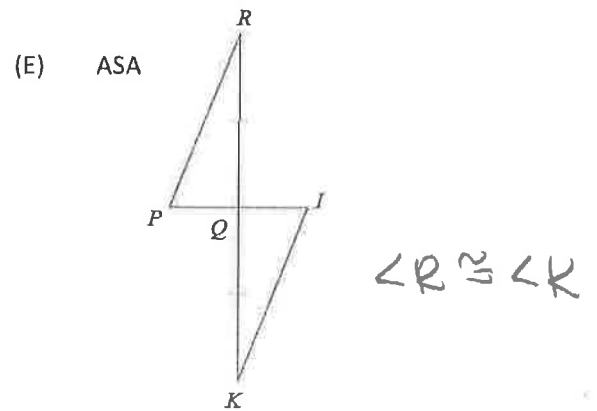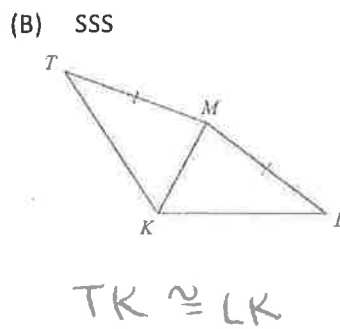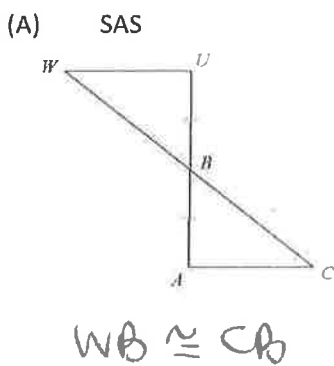
5.4 Equilateral and Isosceles Triangles

18. Find length of TS.

R

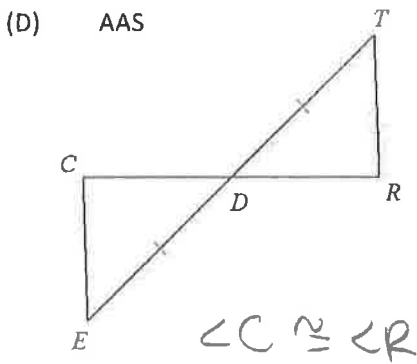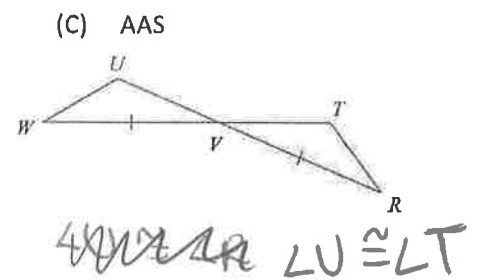$8 - 4w$ $2w + 5$

T   S

$8 - 4(\frac{1}{2})$

$8 - 2$

$8 - 4w = 2w + 5$

$3 = 6w$

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

$\boxed{TS = 6}$

19. Find the measure of angle M.

N   P

$6y°$

$(8y - 16)°$

M

$6y = 8y - 16$

$-2y = -16$

$y = 8$

$6(8) = 48$

$180 - 2(48)$

$\boxed{m∠M = 84°}$
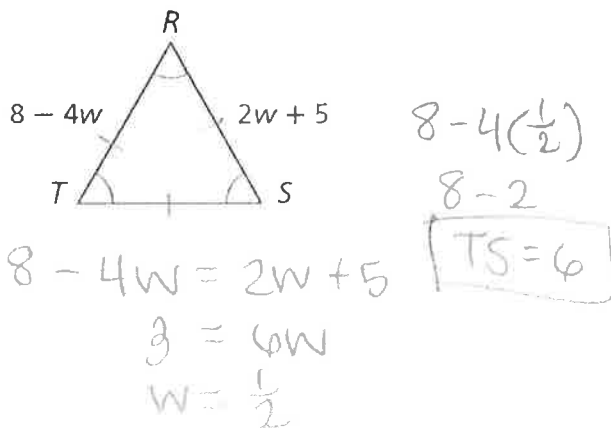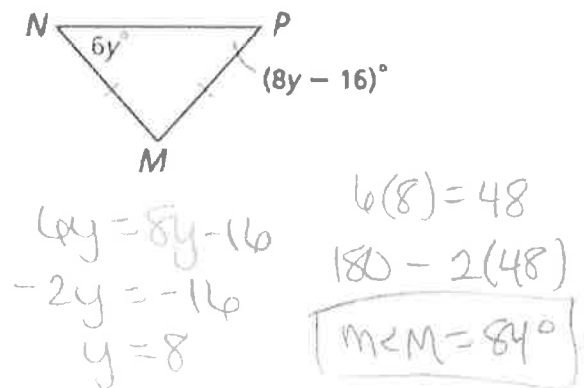
20. Given: $\overline{ZC} \cong \overline{CB}$, C is the midpoint of DX

Prove: $\overline{ZX} \cong \overline{DB}$

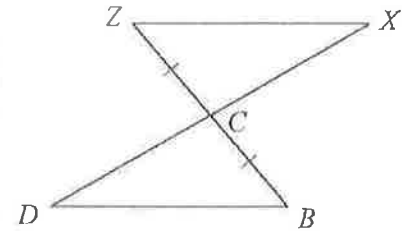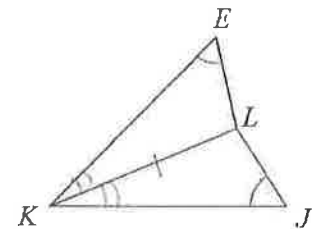| Statements	Reasons
1. ZC ≅ CB	1. given
2. C midpt DX	2. given
3. DC ≅ XC	3. Def midpt
4. ∠ZCX ≅ ∠BCD	4. Vert. ∠'s Thm
5. △ZCX ≅ △BCD	5. SAS
6. ZX ≅ DB	6. CPCTC

21. Given: $\angle E \cong \angle J$, $\overline{LK}$ bisects $\angle EKJ$

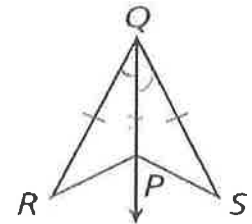Prove: $\overline{EL} \cong \overline{LJ}$

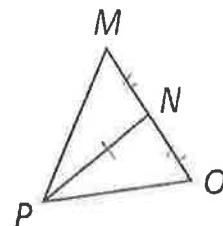| Statements	Reasons
1. ∠E ≅ ∠J	1. given
2. LK bisects ∠EKJ	2. given
3. ∠EKL ≅ ∠JKL	3. Def bisect
4. KL ≅ KL	4. Refl. POC
5. △EKL ≅ △JKL	5. AAS
6. EL ≅ LJ	6. CPCTC

22. **Given:** QP bisects $\angle RQS$. $QR \cong QS$

Prove: $\triangle RQP \cong \triangle SQP$

Statements	Reasons
1. QP bisects ∠RQS	1. given
2. ∠RQP ≅ ∠SQP	2. Def bisect
3. QR ≅ QS	3. given
4. QP ≅ QP	4. Refl. POC
5. △RQP ≅ △SQP	5. SAS

23. **Given:** *PN* bisects *MO*, *PN* ⊥ *MO*
   Prove: △*MNP* ≅ △*ONP*

Statements	Reasons
1. PN bisects MO	1. given
2. MN ≅ ON	2. Def bisect
3. PN ⊥ MO	3. given
4. ∠ONP, ∠MNP rt. ∠s	4. Def ⊥
5. PN ≅ PN	5. Refl. POC
5. ∠ONP ≅ ∠MNP	6. Rt. ∠'s Thm
6. △MNP ≅ △ONP	7. SAS

24. **Given:** *JL* bisects ∠*KLM*, ∠*K* ≅ ∠*M*
   Prove: △*JKL* ≅ △*JML*
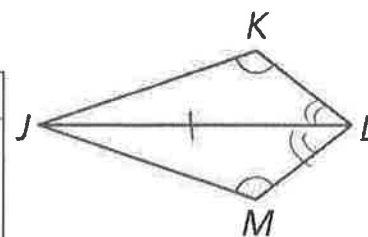
Statements	Reasons
1. JL bisects ∠KLM	1. given
2. ∠KLJ ≅ ∠MLJ	2. Def bisect
3. ∠K ≅ ∠M	3. given
4. JL ≅ JL	4. Refl. POC
5. △JKL ≅ △JML	5. AAS

25. GIVEN: $\overline{AB} \cong \overline{BC}$, $\overline{BD} \perp \overline{AC}$

   PROVE: △*ABD* ≅ △*CBD*
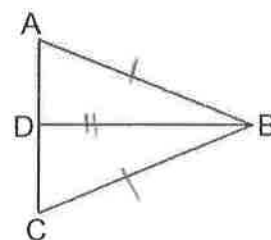
Statements	Reasons
1. AB ≅ BC	1. given
2. BD ⊥ AC	2. given
3. ∠ADB, ∠CDB rt. ∠s	3. Def ⊥
4. DB ≅ DB	4. Refl POC
5. △ABD ≅ △CBD	5. HL

26. Find the fourth vertex of the parallelogram.

(n, p)   (,)

(0, 0)   (m, 0)
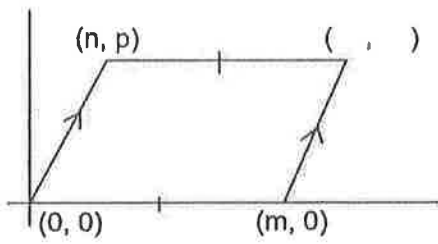
$$(m+n, p)$$

27. Find the midpoint between points (n, p) and (m, 0)

$$\left(\frac{n+m}{2}, \frac{p}{2} \right)$$

28. Find the distance between points (n, p) and (m, 0).

$$D = \sqrt{(n-m)^2 + (p-0)^2}$$

$$D = \sqrt{(n-m)^2 + p^2}$$