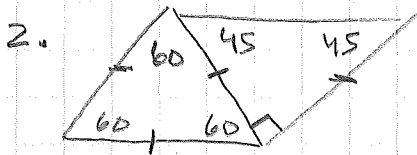


Geometry Final Exam Review #2

1. $3x = 4y$
 $x = 16$
 $y + 4y + 4y = 180$
 $y = 84$



$x = 45$
 $y = 60$

3. $a = 84$
 $z = 48$
 $x = 66$
 $y = 66$

4. $\begin{cases} 3y = 4x + 3 \\ x + y + 18 + 3y + 4x + 3 = 180 \end{cases}$

5. $\begin{cases} (-4x + 3y) = (3) \cdot 5 \\ (5x + 4y) = (159) \cdot 4 \end{cases}$

$\begin{cases} -20x + 15y = 15 \\ 20x + 16y = 636 \end{cases}$

$31y = 651$

$y = 21$

$3(21) = 4x + 3$

$63 = 4x + 3$

$60 = 4x$

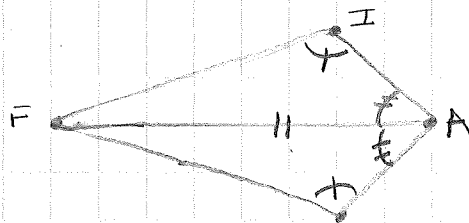
$15 = x$

5. a) Acute Equilateral
 b) Obtuse Isosceles
 c) Right Scalene

6. $\triangle ZWP \cong \triangle SQV$

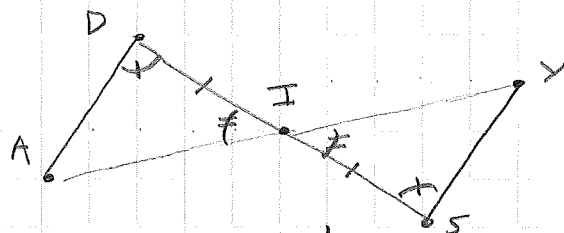
7. a) \cong , by SAS
 b) not \cong (SSA not an option)
 c) \cong by AAS
 d) \cong by HL
 e) \cong by ASA
 f) not \cong (AAA not an option)

8. Given: $\angle T \cong \angle I$
 \overline{FA} bisects $\angle IAT$
 Prove: $\triangle FIA \cong \triangle FTA$



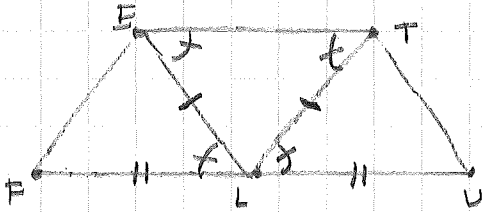
Statements	Reasons
$\angle T \cong \angle I$	Given
\overline{FA} bisects $\angle IAT$	Given
$\angle IAF \cong \angle TAF$	Defn of Bisector
$\overline{FA} \cong \overline{FA}$	Reflexive Prop
$\triangle FIA \cong \triangle FTA$	AAS

9. Given: $\angle D \cong \angle S$
 I midpt \overline{DS}
 Prove: $\triangle DIA \cong \triangle SIY$



Statements	Reasons
$\angle D \cong \angle S$	Given
I midpt \overline{DS}	Given
$\overline{DI} \cong \overline{SI}$	Defn of Midpt
$\angle AID \cong \angle YIS$	Vertical \angle 's \cong
$\triangle DIA \cong \triangle SIY$	ASA

10. Given: $\angle LET \cong \angle LTE$
 L midpt \overline{UF}
 $\angle ELF \cong \angle ULT$
 Prove: $\triangle FEL \cong \triangle ULT$

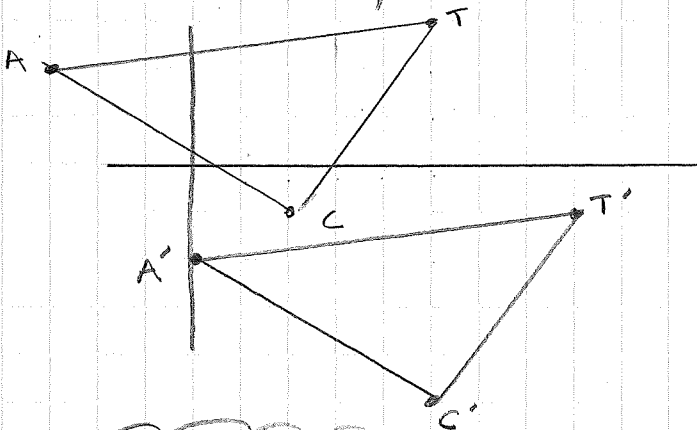


Statements	Reasons
$\angle LET \cong \angle LTE$	Given
$\overline{LE} \cong \overline{LT}$	Isos Δ Thm (converse)
L midpt \overline{UF}	Given
$\overline{FL} \cong \overline{LU}$	Defn of Midpt
$\angle ELF \cong \angle ULT$	Given
$\triangle FEL \cong \triangle ULT$	SAS

11. a) Dilation
 b) Translation
 c) reflection
 d) rotation

12. a)

	$x+3$	$y-4$
C'	5	-5
A'	0	-2
T'	8	-1

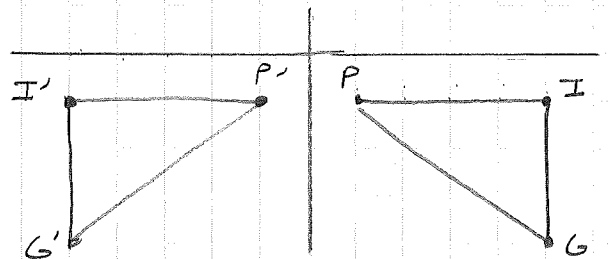


Translation right 3
 down 4

12b)

	$-x$	y
P'	-1	-1
I'	-5	-1
G'	-5	-4

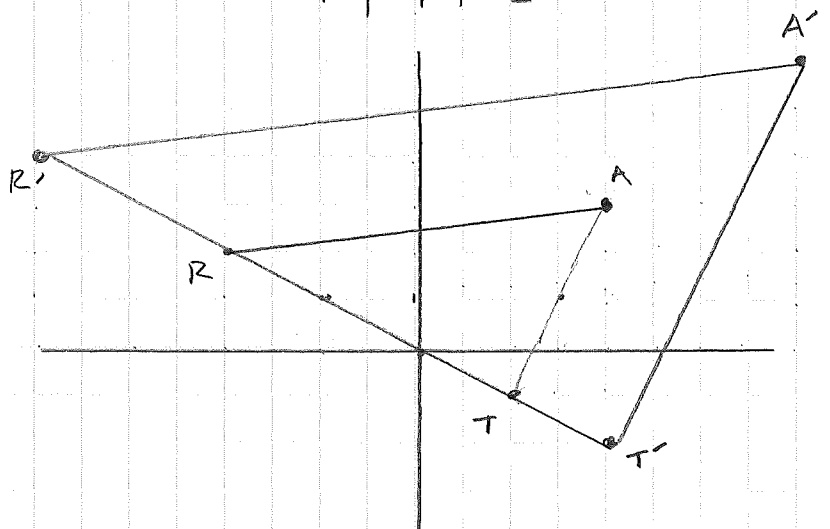
Reflection
 over
 y -axis



12c)

	$2x$	$2y$
R'	-8	4
A'	8	6
T'	4	-2

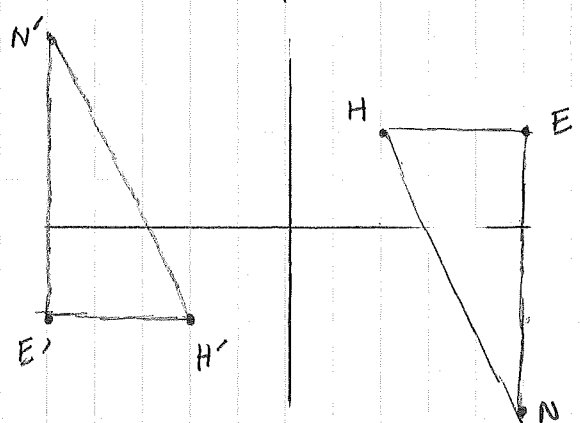
Dilation
 $k=2$



12d)

	$-x$	$-y$
H'	-2	-2
E'	-5	-2
N'	-5	4

Rotation
 180° about
 $(0,0)$



13. a) Translation left 3
 b) Translation right 1
 down 2
 c) rotation 180° about $(0,0)$

14. a) $(x, y) \rightarrow (x, y+4)$
 b) $(x, y) \rightarrow (x, -y)$
 c) $(x, y) \rightarrow (x-2, y)$

15. 5 sides $\rightarrow 540^\circ$
 $5x = 540$
 $x = 108$

$$y = \frac{360}{5}$$

$$y = 72^\circ$$

$$16. \begin{cases} 3x + 6x + 6 + 7x + 10y - 6 = 360 \\ 6x + 6 + 4x + 2y = 180 \end{cases}$$

$$\begin{cases} 16x + 10y = 360 \\ -5(10x + 2y) = (174) \cdot -5 \end{cases}$$

$$\begin{cases} 16x + 10y = 360 \\ -50x - 10y = -870 \end{cases}$$

$$-34x = -510$$

$$\boxed{x = 15}$$

$$16(15) + 10y = 360$$

$$240 + 10y = 360$$

$$10y = 120$$

$$\boxed{y = 12}$$

18. $\frac{180(n-2)}{n} = 135$

$$180(n-2) = 135n$$

$$180n - 360 = 135n$$

$$-360 = -45n$$

$$\boxed{8 = n}$$

8 sides

19. $n = 6$ $\frac{360}{6} = \boxed{60^\circ}$

20. $15 - 6 < x < 15 + 6$
 $9 < x < 21$

21. a) $\sqrt{18} = \sqrt{9 \cdot 2} = \boxed{3\sqrt{2}}$

b) $\sqrt{64} + \sqrt{25}$
 $8 + 5 = \boxed{13}$

c) $5\sqrt{2} + 7\sqrt{2} = \boxed{12\sqrt{2}}$

d) $\sqrt{40} + \sqrt{90}$
 $\sqrt{4 \cdot 10} + \sqrt{9 \cdot 10}$
 $2\sqrt{10} + 3\sqrt{10} = \boxed{5\sqrt{10}}$

22. a) $2x^2 + 5x - 12 = 0$ ~~$-2x^2$~~
 $2x^2 + 8x - 3x - 12 = 0$ ~~$8x$~~ ~~$-3x$~~
 $2x(x+4) - 3(x+4) = 0$ ~~$5x$~~

$$(2x-3)(x+4) = 0$$

$$2x-3=0 \quad x+4=0$$

$$2x=3$$

$$\boxed{x = -4}$$

$$\boxed{x = \frac{3}{2}}$$

b) $2x^2 + 5x - 12 = 0$
 $a=2 \quad b=5 \quad c=-12$

$$x = \frac{-5 \pm \sqrt{5^2 - 4(2)(-12)}}{2(2)}$$

$$x = \frac{-5 \pm \sqrt{25 + 96}}{2(2)}$$

$$x = \frac{-5 \pm \sqrt{121}}{4}$$

$$x = \frac{-5 \pm 11}{4}$$

$$x = \frac{-5+11}{4} \quad \text{or} \quad x = \frac{-5-11}{4}$$

$$x = \frac{6}{4}$$

$$x = \frac{-16}{4}$$

$$\boxed{x = \frac{3}{2}}$$

$$\boxed{x = -4}$$

17*
see
last
page

23. $(4, -7) (11, 7)$

$$m = \frac{7 - (-7)}{11 - 4}$$

$$m = \frac{14}{7}$$

$$m = 2$$

$$y - y_1 = m(x - x_1)$$

$$y - 7 = 2(x - 11)$$

$$y - 7 = 2x - 22$$

$$\boxed{y = 2x - 15}$$

24. $y = 3x - 5$

$$m = 3$$

$$\perp m = -\frac{1}{3} \quad (6, -2)$$

$$y - (-2) = -\frac{1}{3}(x - 6)$$

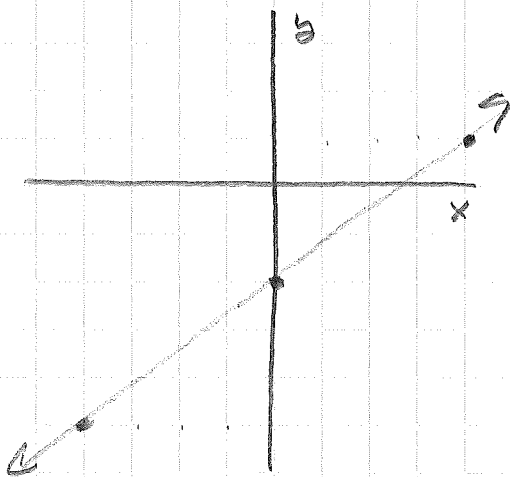
$$y + 2 = -\frac{1}{3}x + 2$$

$$\boxed{y = -\frac{1}{3}x}$$

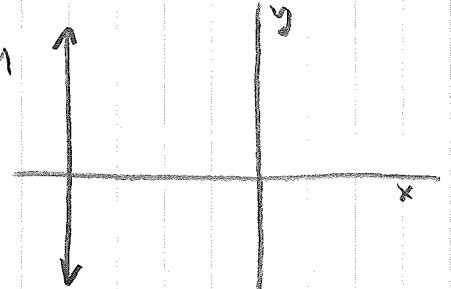
25. a) $3x - 4y = 8$

$$\frac{-4y}{-4} = \frac{-3x + 8}{-4}$$

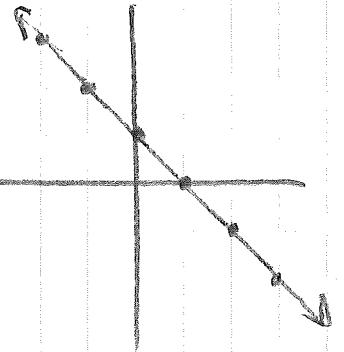
$$y = \frac{3}{4}x - 2$$



b) $x = -4$



c) $y = 1 - x$
 $y = -x + 1$



26. $2x - y = 7$
 $-y = -2x + 7$
 $y = 2x - 7$

Parallel slope: $m = 2$

* 17. $w + w - 13 + w + 10 = 360$

$$3w - 3 = 360$$

$$3w = 363$$

$$\boxed{w = 121}$$

$$\boxed{\begin{matrix} x = 59 \\ y = 72 \\ z = 49 \end{matrix}}$$