Name: _____

7.5 Practice Problems

1. Given: Isosceles trapezoid ABCD, m∠BAC = 30° and m∠DBC = 85°

m∠1= **30°**   m∠5= **60°**   m∠ ADC = **65°**

m∠2= **30°**   m∠6= **120°**   m∠ BCD = **65°**

m∠3= **35°**   m∠7= **30°**   m∠ DAB = **115°**

m∠4 = **35°**   m∠8 = **85°**   m∠ CBA= **115°**
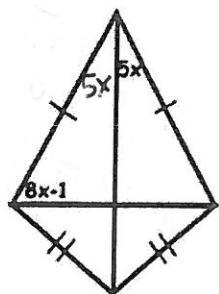
(top right margin)
85+30
= 115°

30°

A   30° 7   B
8 85°   120° 85°
     5
        6
    3   120°
D 1   30° 2 C

65°

180
−65
−85
_____
30

2. Find x.
x = **7**

$5x + 8x - 1 = 90$
$13x = 91$
$\dfrac{13x}{13} = \dfrac{91}{13}$
$x = 7$
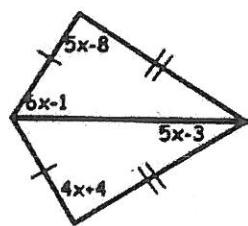
(kite figure labeled 5x, 5x, 8x-1)

3. Find x
x = **12**

$5x - 8 = 4x + 4$
$x = 12$

(kite figure labeled 5x-8, 6x-1, 5x-3, 4x+4)

4. Kite FGHJ
KF = **3**
KJ = **√30**

(kite figure H, G, J, F, K labeled 3√5, 3, √30, 3√5)

$(3\sqrt5)^2 = 3^2 + x^2$
$45 - 15 = x^2$
$\sqrt{30} = \sqrt{x^2}$

5. x = **35**
y = **30**

(kite figure labeled 3x-5, 110°, 2y-20, y, 2y-20, 4x-30)

$3x+5 = 4x-30$
$35 = x$
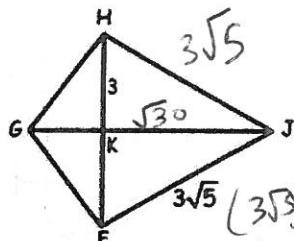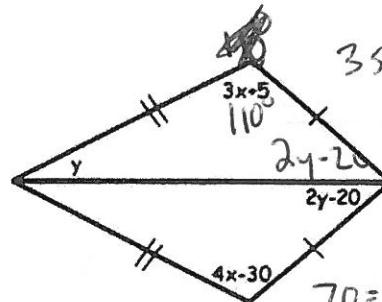
$70 = y + 2y - 20$
$90 = 3y$
$30 = y$

$\overline{XY}$ is the median of trapezoid QRST in problems 6-11.

| 6. XY=18 and TS = 7. Find QR.	7. TS = n and QR = 6. Find XY in terms of n.	8. XY=16. Find TS+QR.
29 Isosceles R, y, S, 18, Q, X, T, 7	$XY = \dfrac{n+6}{2}$ R, y, 6, S, n, Q, X, T	$\dfrac{TS+QR}{2} = 16$ $TS + QR = 32$ R, y, 16, S, Q, X, T
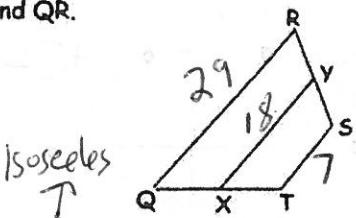
(right margin) 70 = y + 2y - 20   90 = 3y   30 = y
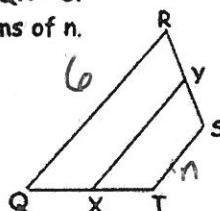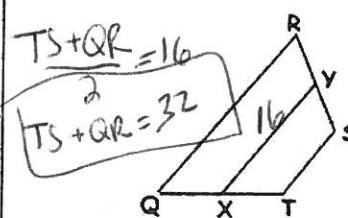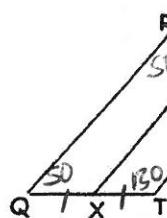
| 9. TX = ½ (SR) and m∠T=130. Find m∠R. **=50**	10. ST = a and QR = 2b. Find XY.	11. QX=SY and m∠TXY = 45. Find m∠R.
R, 50, y, S, 50, 130, Q, X, T	$XY = \dfrac{a+2b}{2}$ **2b** R, y, S, a, Q, X, T	**45°** R, 45°, y, S, 45°, 45°, Q, X, T
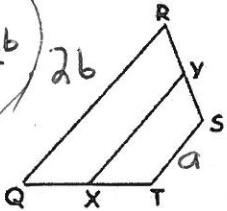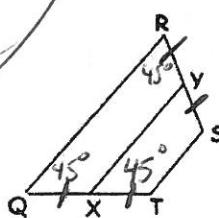
Graph and label each quadrilateral with the given vertices. Then determine the most precise name for each quadrilateral. Explain why you chose the name you did. Show work to support the explanations.

12. A(3,5), B(7,6), C(6,2), D(2,1)

Rhombus
- Equilateral
- Not equiangular
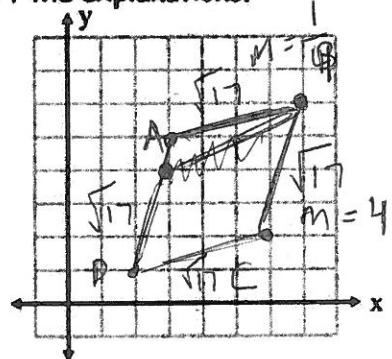
13. W(-1,1), X(0,2), Y(1,1), Z(0,-2)

Kite
- consecutive sides are ≅
- Not a parallelogram
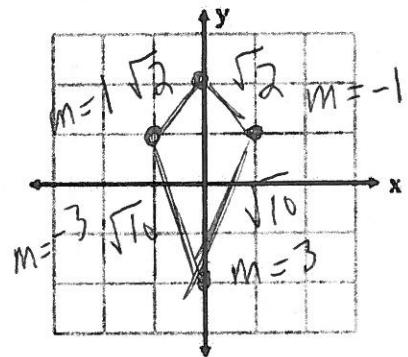
14. J(2,1), K(5,4), L(7,2), M(2,-3)

~~Isoceles~~ Trapezoid
- One pair of parallel sides
- Legs are Not congruent
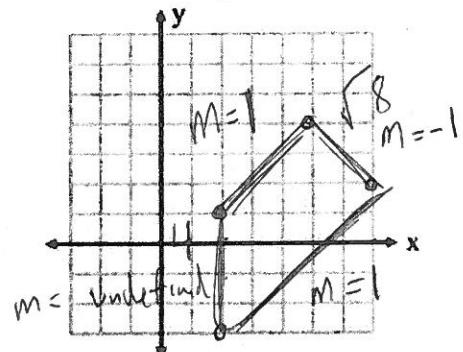
15. E(-3,1), F(-7,-3), G(6,-3), H(2,1)

Isosceles Trapezoid
- One ~~pair~~ pair of parallel sides
- Legs are ≅
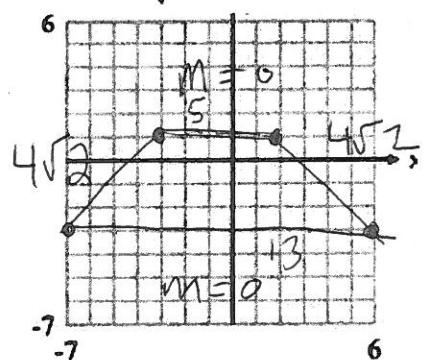
16. **ATTENDING TO PRECISION** In trapezoid $PQRS$, $\overline{PQ} \parallel \overline{RS}$ and $\overline{MN}$ is the midsegment of $PQRS$. If $RS = 5 \cdot PQ$, what is the ratio of MN to RS?

(A) 3:5   (B) 5:3

(C) 1:2   (D) 3:1

$\frac{3x}{5x}$

$\frac{x+5x}{2} = \frac{6x}{2}$

$= 3x$