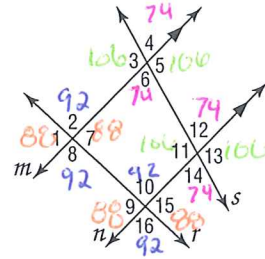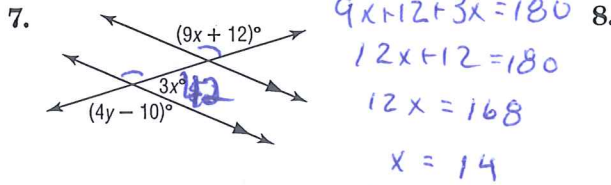## 3-2 Practice

Angles and Parallel Lines

In the figure, $m\angle 2 = 92$ and $m\angle 12 = 74$. Find the measure of each angle.
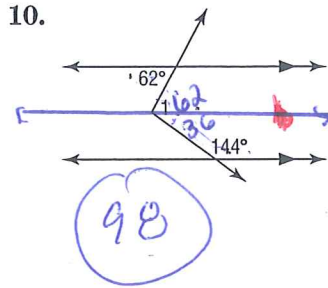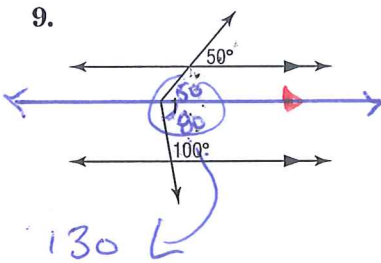

1. $\angle 10$ 92

2. $\angle 8$ 92

3. $\angle 9$ 88

4. $\angle 5$ 106

5. $\angle 11$ 106

6. $\angle 13$ 106

Find x and y in each figure.

7.

$(9x + 12)°$ $3x°$ $(4y - 10)°$

$9x + 12 + 3x = 180$
$12x + 12 = 180$
$12x = 168$
$x = 14$
$4y - 10 + 42 = 180$
$4y + 32 = 180$
$4y = 138$
$y = 37$

$x = 14$ $y = 37$

8.

$(5y - 4)°$ $3y°$ $(2x + 13)°$

$5y - 4 + 3y = 180$
$8y - 4 = 180$
$+4 \quad +4$
$\dfrac{8y}{8} = \dfrac{184}{8}$
$y = 23$

$2x + 13 = 69$
$-13 \quad -13$
$\dfrac{2x}{2} = \dfrac{56}{2}$
$x = 28$

$x = 28$ $y = 23$

Find $m\angle 1$ in each figure.

9.

$50°$ $100°$

130

10.

$62°$ $144°$

98

11. **PROOF** Write a ~~paragraph~~ 2-column proof of Theorem 3.3.

Given: $\ell \parallel m, m \parallel n$
Prove: $\angle 1 \cong \angle 12$

Statements	Reasons
1. $\ell \parallel m, m \parallel n$	1. Given
2. $\angle 1 \cong \angle 8$	2. AEA
3. $\angle 8 \cong \angle 12$	3. Corresponding $\angle$'s
4. $\angle 1 \cong \angle 12$	4. Transitive Property
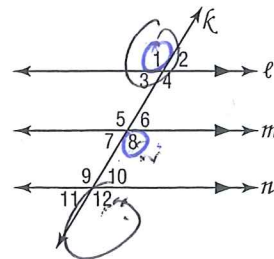
12. **FENCING** A diagonal brace strengthens the wire fence and prevents it from sagging. The brace makes a 50° angle with the wire as shown. Find y.

130