3 - 5
Proving Lines Parallel
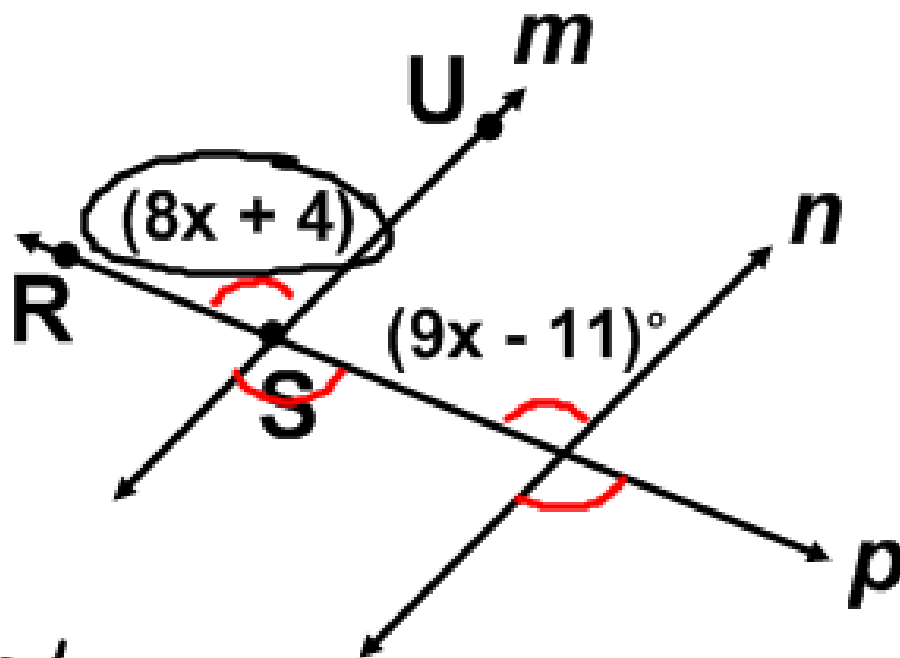
Ex: Determine which lines, if any, are parallel.

a

103

b

77° 103°

100°

c
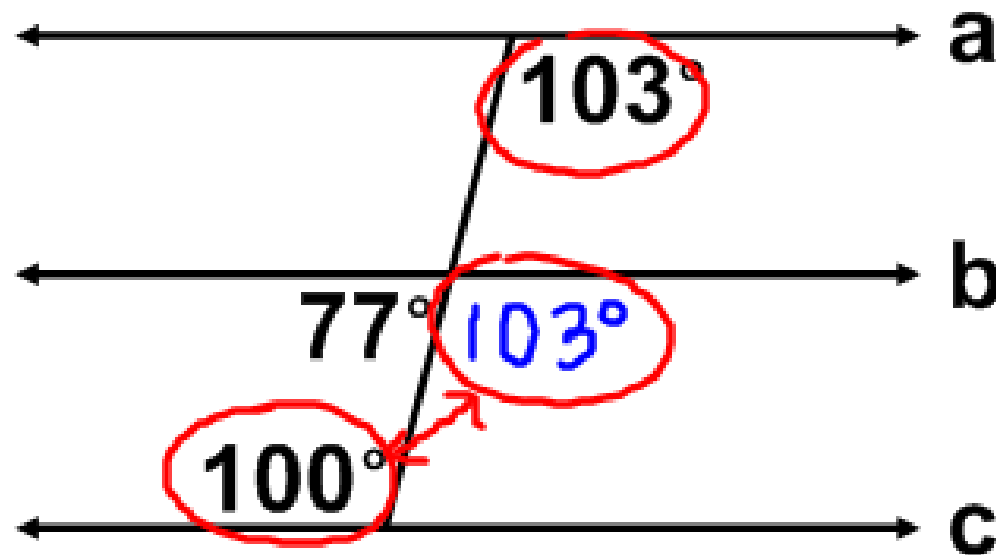
all b

b ∦ c

Ex: Find x and m∠RSU so that m∥n.

U m

$(8x + 4)$

R

S

$(9x - 11)°$

n

p

$8 \cdot 15 + 4$

$120 + 4$

$124°$

$8x + 4 = 9x - 11$

$-8x \qquad -8x$

$4 = x - 11$

$+11 \qquad +11$

$15 = x$

Ex: Find x and m∠ZYN so that
$$\overleftrightarrow{PQ} \parallel \overleftrightarrow{MN}.$$
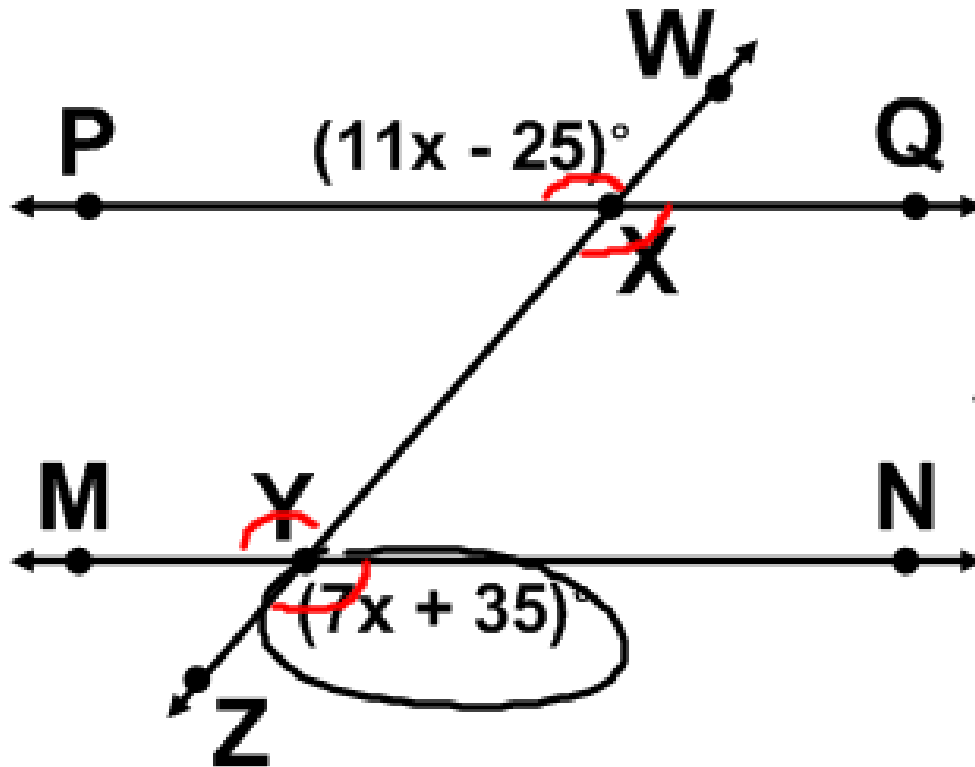
W

P   (11x - 25)°   Q

X

M   Y   N

(7x + 35)

Z

$$11x - 25 = 7x + 35$$
$$-7x \qquad\qquad -7x$$
$$4x - 25 = 35$$
$$+25 \quad +25$$

$$\frac{4x}{4} = \frac{60}{4}$$

$$x = 15$$

$$7 \cdot 15 + 35$$
$$105 + 35$$

$$140°$$

Homework:

p.155 #13 - 23 odd, 26 - 31 all