Given: a || b || c   and   m ∠M = 56°   and $\overline{MQ} \cong \overline{MR}$ and $\overline{MR} \perp \overline{TR}$

Find the measure of all numbered angles.
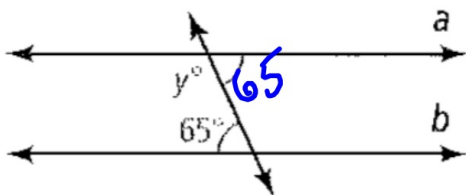

M

56

Q 8 62   62   28
        28 9 R 62
a

              28

b   28   66
                               118

152
      28

c
T   S 4 118
                                  3 62
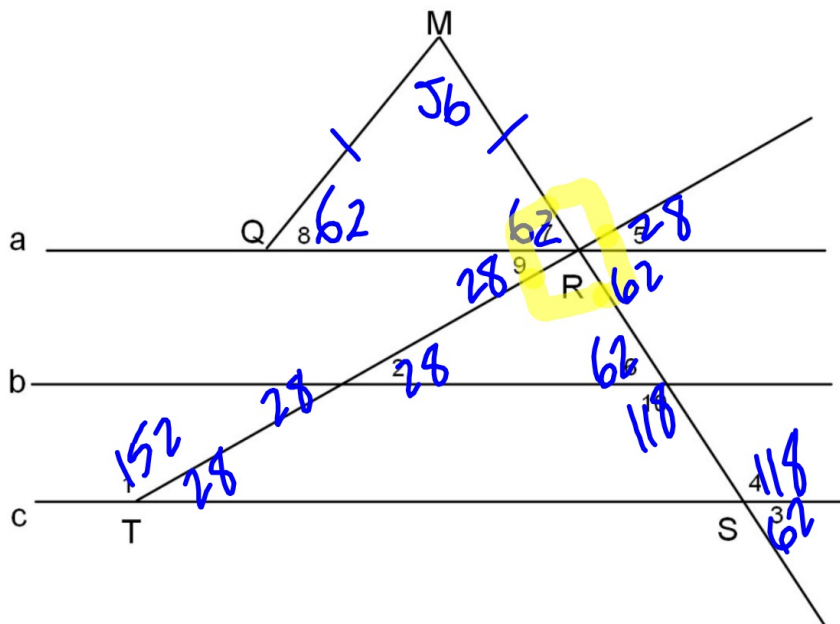
1. State the theorem or postulate that
   proves a // b.

a

b
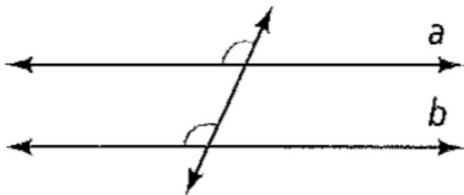
Theorem/Postulate: CONV.
                       CORRESP

2. State the theorem or postulate that proves a // b.
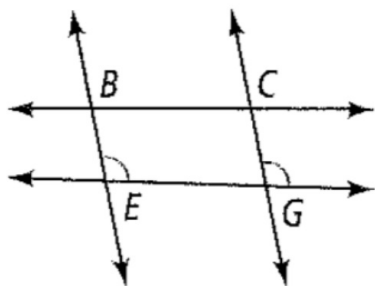

a

$y°$ 65

65°

b

Theorem/Postulate: **conv. alt int $\angle$'s thm.**

_____

What is the value of y in order for a || b? **b**

$y =$ **115°**

3. Which lines or segments are parallel? State the theorem or postulate that justifies your answer.
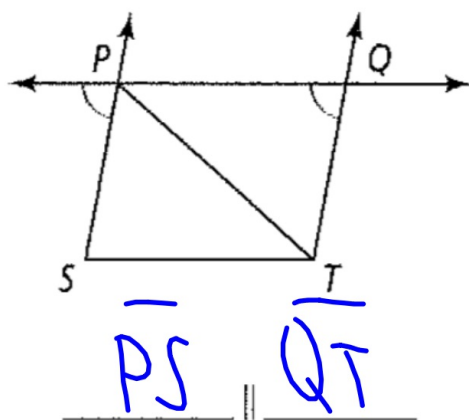

B

C

E

G

$\overline{CG}$ || $\overline{BE}$

Theorem/Postulate: **conv. corres. $\angle$'s**

_____

4. Which lines or segments are parallel? State the theorem or postulate that justifies your answer.
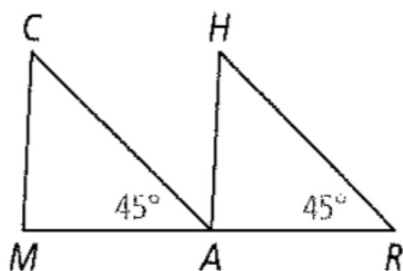

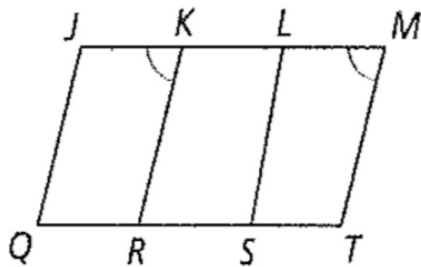$\overline{PS} \parallel \overline{QT}$

Theorem/Postulate: conv. corresp.

_____

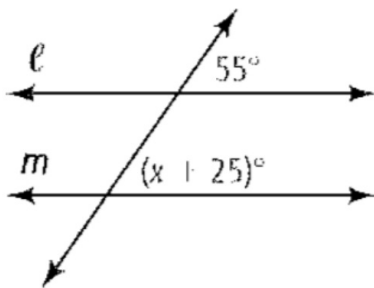5. Which lines or segments are parallel? State the theorem or postulate that justifies your answer.

$\overline{CA} \parallel \overline{HR}$ conv. corresp

Theorem/Postulate:

_____

6. Which lines or segments are parallel? State the theorem or postulate that justifies your answer.

J   K   L   M

Q   R   S   T

$\overline{KR} \parallel \overline{MT}$

Theorem/Postulate:

conv. covr.

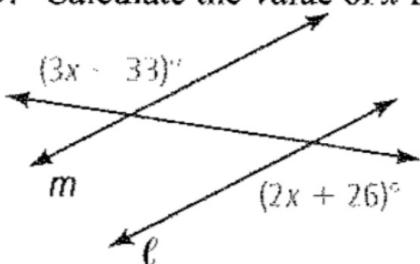7. Calculate the value of x for which $\ell \parallel m$

ℓ 55°

m $(x + 25)°$

CORRES

$x + 25 = 55$

$x =$ 30

8. Calculate the value of x for which $\ell \parallel m$

$95°$

$(2x - 5)°$

m

ℓ
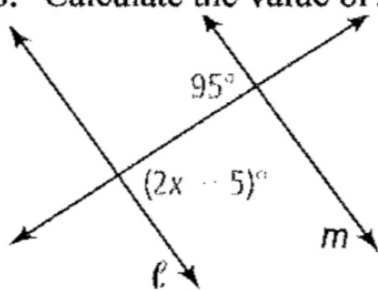
alt int

$2x - 5 = 95$

$2x = 100$

$x =$ ____50____

9. Calculate the value of x for which $\ell \parallel m$

$(3x - 33)°$

m

$(2x + 26)°$

ℓ

alt. ext

$3x - 33 = 2x + 26$

$x - 33 = 26$

$x =$ ____59____

10. Calculate the value of x for which $\ell \parallel m$

ℓ m

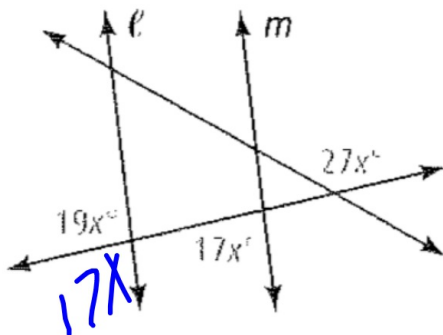105°
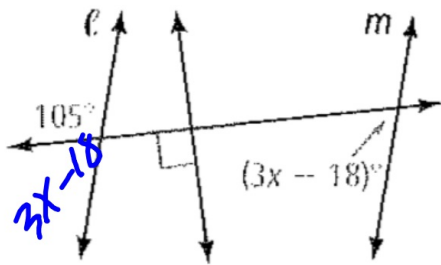
$3x - 18$

(3x -- 18)°

$3x - 18 + 105 = 180$
$3x + 87 = 180$
$x = 31$

$x =$ ___31___

11. Calculate the value of x for which $\ell \parallel m$

ℓ m

27x°

19x°

17x°

17X

$19x + 17x = 180$
$36x = 180$

$x =$ ___5___

12. Calculate the value of x for which $\ell \parallel m$

$5x^\circ$

$2x^\circ$

ℓ

m

$(5x + 40)^\circ$
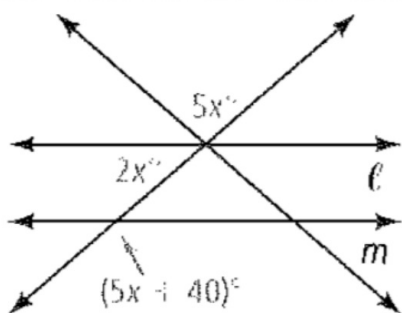
$x =$ _____

13. $\angle 2$ is supplementary to $\angle 3$

_____ a $\parallel$ b _____

Why?

conv. SS Int.

$1/5$ $9/11$ a
$2/6$ $10/12$

$3/7$ b
$4/8$

ℓ m
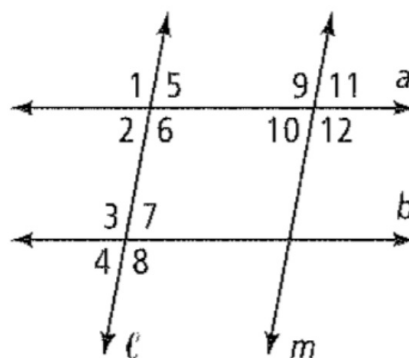
14. $\angle 1 \cong \angle 3$

_____ $a \parallel b$ _____

Why?

_____ CONV. CORR _____
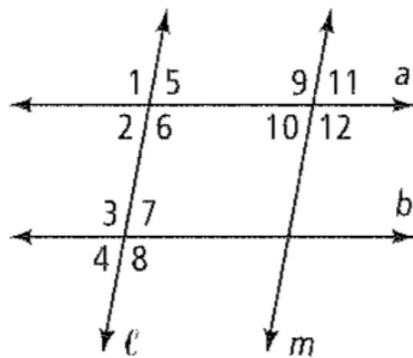
15. $\angle 9 \cong \angle 12$

_____ $\parallel$ _____

Why?

Cannot Determine
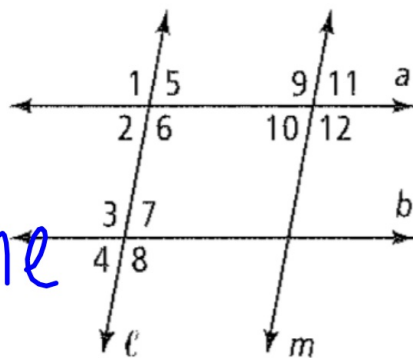
16. ∠6 is supplementary to ∠7

_a_ ‖ _b_

Why?

conv. SS Int.

17. ∠1 ≅ ∠8

_a_ ‖ _b_
conv.
alt. ext

Why?
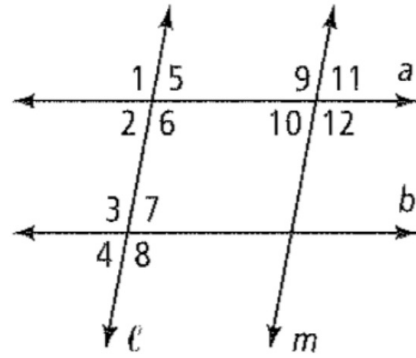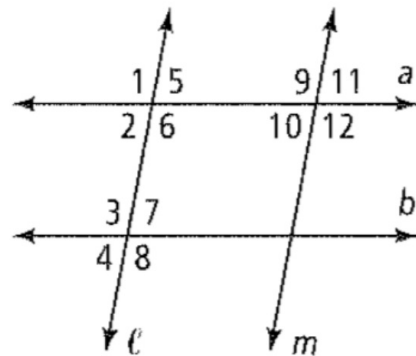
18. $\angle 8 \cong \angle 6$

   ___ a ∥ b ___

Why?

   _____ conv. corresp. _____
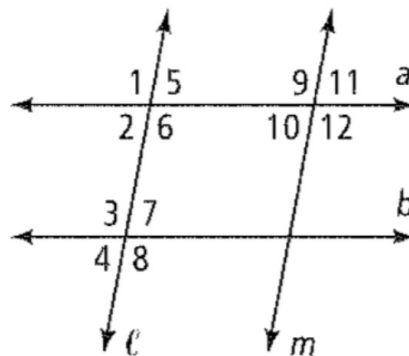
19. $\angle 2 \cong \angle 10$

   ___ ℓ ∥ m ___

Why?

   _____ conv. corresp. _____

20. $\angle 5 \cong \angle 10$

_____ℓ_____ || _____m_____
conv.
alt. Int

Why?
_____

21. $m\angle 7 = 65°$ and $m\angle 9 = 115°$

_____ || _____

Why?
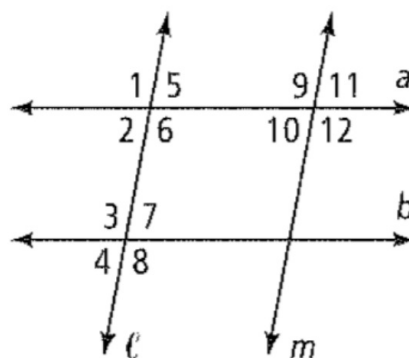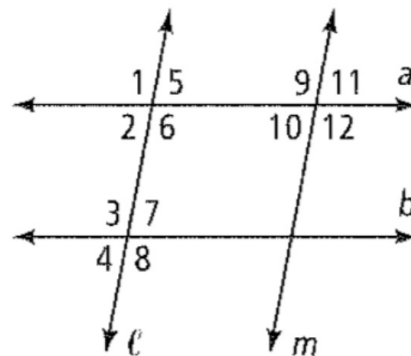
cannot determine
_____

22. $\angle 11 \cong \angle 7$

_____ $\|$ _____

Why?

Cannot determine