Name: *Key 2021*

Parallel Proofs HW

when given: ‖ lines → use ‖ lines form.

when you want to → use ⌇⌇⌇⌇ form
Prove ‖ lines   ‖ lines

1. Given: t // h
   Prove: <3 and <7 are supplementary.

Statements	Reasons
1. t ‖ h	1. given
2. <5 ≅ <7	2. Vertical <s are ≅
3. <3 + <5 = 180	3. ‖ lines form suppl. con. int ∠s
4. <3 + <7 = 180	4. ‖ lines form _____ Substitution
5. <3 and <7 are Suppl.	5. def of suppl.
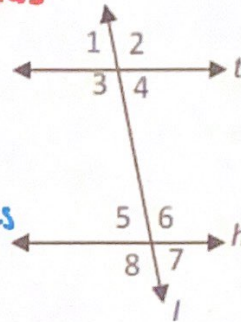
2. Given: DE // BC and <1 ≅ <2
   Prove: <3 ≅ <4

Statements	Reasons
1. DE ‖ BC <1 ≅ <2	1. given
2. <1 ≅ <3, and <4 ≅ <2	2. ‖ lines form ≅ corr. ∠s
3. <3 ≅ <4	3. Substitution
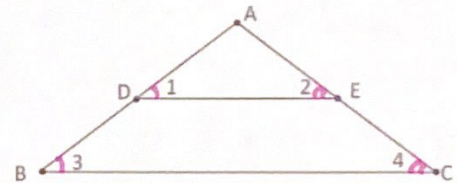
3. Given: p// q // r
   Prove: <2 and <4 are supplementary

Statements	Reasons
1. p ‖ q ‖ r	1. Given
2. <3 + <4 = 180	2. ‖ lines form Suppl. consecutive int ∠s.
3. <3 ≅ <2	3. Vertical ∠s are ≅
4. <2 + <4 = 180	4. Substitution
5. <2 and <4 are Suppl.	5. def of suppl.
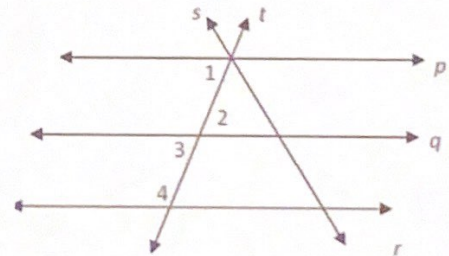
4. Given: HJ // LM, HG//LK
   Prove: <5 ≅ <8
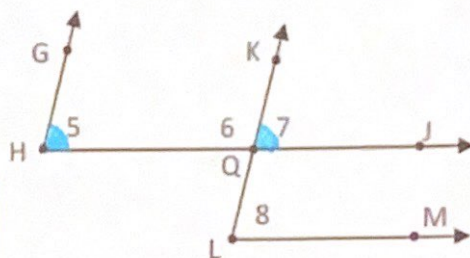
Statements	Reasons
1. HJ//LM, HG//LK	1. Given
2. <5 ≅ <7	2. ‖ lines form ≅ corr. ∠s
3. <7 ≅ <8	3. ‖ lines form ≅ corr. ∠s
4. <5 ≅ <8	4. Substitution

] these could be
together or 2 steps.
You must follow what
the proof gives you ☺

5. Given: $a \parallel b$, $\ell // m$
   Prove: <5 ≅ <13
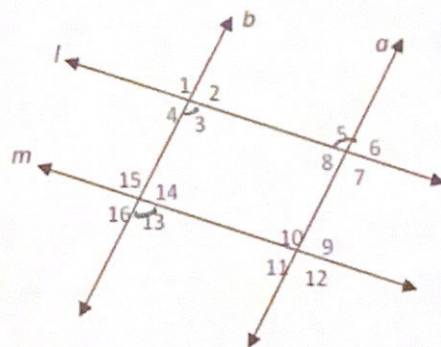
Statements	Reasons
1. a‖b, ℓ//m	1. Given
2. <5 ≅ <3	2. ‖ lines form ≅ alt int angles.
3. <3 ≅ <13	3. ‖ lines form ≅ corr. ∠s
4. <5 ≅ <13	4. Substitution

6. Given: g // h, <1 ≅ <2
   Prove: p // r

Statements	Reasons
1. g // h	1. given
2. <1 ≅ <3	2. // lines form ≅ corr. ∠s
3. <1 ≅ <2	3. Given
4. <3 ≅ <2 Not // lines form	4. Substitution
5. p // r	5. ≅ alt ext. ∠s form // lines

You must follow the proof that you are given ☺
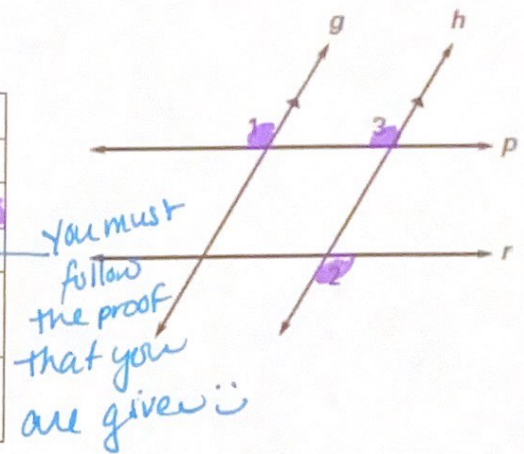
7. Given: n // m and <1 ≅ <2
   Prove: p // r

Statements	Reasons
1. n // m	1. Given
2. <1 ≅ <3	2. // lines form ≅ alt. int ∠s
3. <1 ≅ <2	3. Given
4. <3 ≅ <2	4. Substitution
5. p // r	5. ≅ alt. INT ∠s form // lines
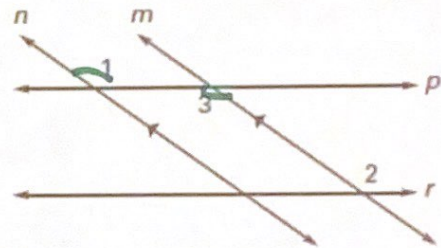
8. Given: q // r, <1 and <4 are supplementary
   Prove: p // q

Statements	Reasons
1. q // r ∠1 and ∠4 are Suppl.	1. Given
2. < 1 + <4 = 180	2. def of suppl.
3. < 3 + <4 = 180	3. // lines form suppl. consecutive int ∠s.
4. < 1 + <4 = < 3 + <4 -∠4 -∠4	4. Substitution
5. <1 ≅ <3	5. Subtraction
6. p // q	6. ≅ corresponding ∠s form // lines.
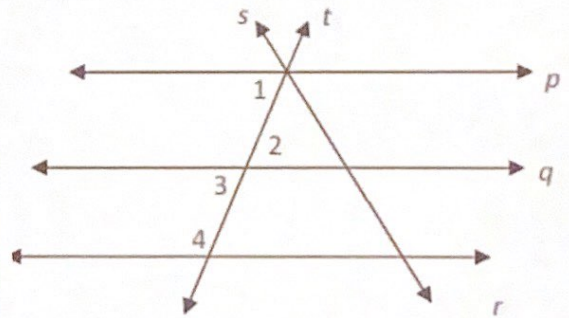
9. Given: <2 and <8 are supplementary
   Prove: m// n

Statements	Reasons
1. ∠2 and ∠8 are suppl.	1. Given
2. < 2 + <8 = 180	2. def of suppl.
3. < 2 + <4 = 180	3. linear pairs are suppl.
4. < 2 + <8 = < 2 + <4	4. Substitution
5. <8 ≅<4	5. subtraction
6. m //n	6. ≅ corr. ∠s form // lines