

SM2H 7.3 Proving Lines Parallel Answers

1. Parallel
Alternate Interior Angles Congruent
2. Parallel
Corresponding Angles Congruent
3. Not Parallel
Sum Same Side Interior Angles $\neq 180^\circ$
4. Parallel
Linear Pair and Corresponding Angles Congruent
5. $\overline{EH} \parallel \overline{FG}$
Alternate Interior Angles Congruent
6. $\overline{AD} \parallel \overline{BC}$
Same Side Interior Angles Supplementary
7. $\overline{LM} \parallel \overline{XY}$
Corresponding Angles Congruent
8. $\overline{GB} \parallel \overline{FC}$
Corresponding Angles Congruent
9. $\overline{FD} \parallel \overline{BA}$ Alternate Interior Angles Congruent
 $\overline{ED} \parallel \overline{BC}$ Alternate Interior Angles Congruent
 $\overline{FG} \parallel \overline{ED}$ Alternate Interior Angles Congruent
 $\overline{FG} \parallel \overline{BC}$ If 2 lines are parallel to a third line,
they are parallel to each other.
10. $\overline{JL} \parallel \overline{KM}$ Same Side Interior Angles Supplementary
11. $J \parallel K$ by Alternate Interior Angles Congruent
12. None- Vertical Angles
13. $J \parallel K$ Corresponding Angles Congruent
14. $J \parallel K$ Same Side Interior Angles Supplementary
15. None- Linear Pair
16. $L \parallel N$ Same Side Interior Angles Supplementary
17. $L \parallel N$ Alternate Exterior Angles Congruent
18. $\overline{NQ} \parallel \overline{PS}$ Corresponding Angles Congruent
19. $\overline{NQ} \parallel \overline{PS}$ Alternate Interior Angles Congruent
20. $\overline{QR} \parallel \overline{TS}$ Corresponding Angles Congruent
21. None- no relation
22. $\overline{QR} \parallel \overline{TS}$ Same Side Interior Angles Supplementary
23. $x = 10$ Alternate Interior Angles Congruent
24. $x = 36$ Corresponding Angles Congruent
25. $x = 15$ Same Side Interior Angles Supplementary
26. $x = 20$ Alternate Interior Angles Congruent
 $y = 25$ Same Side Interior Angles Supplementary
27. $x = 18$ Alternate Interior Angles Congruent
 $y = 26$ Corresponding Angles Congruent
28.

Statements	Reasons
1. $\angle 1 \cong \angle 2$	1. Given
2. $a \parallel b$	2. Alternate Interior Angles \cong
29.

Statements	Reasons
1. $\angle 1 \cong \angle 2$	1. Given
2. $c \parallel d$	2. Corresponding Angles \cong
3. $\angle 3$ & $\angle 4$ are supplementary	3. Same Side Interior Angles supplementary
30. Reasons
 1. Given
 2. Same Side Interior
angles Supplementary
 3. Given
 4. Substitution
 5. Subtraction Property
of equality

31. Statement	Reasons
1. $\angle 9 \cong \angle 10$ and $m\angle 3 = (6x - 16)^\circ$, $m\angle 5 = (5x + 4)^\circ$	1. Given
2. $c \parallel d$	2. Alternate Interior Angles Contruent
3. $\angle 3 \cong \angle 5$	3. Alternate Interior Angles Contruent
4. $6x - 16 = 5x + 4$	4. Substitution
5. $x - 16 = 4$	5. Subtraction Property of Equality
6. $x = 20$	6. Addition Property of Equality