

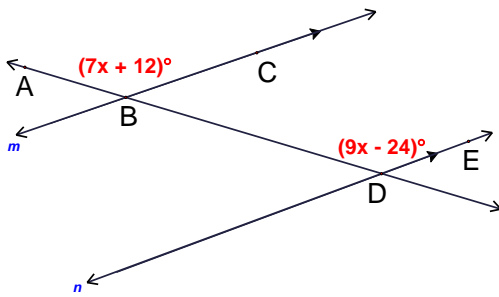


- I can write logical arguments using properties from algebra and geometry.

## REASON BANK

Addition Property Alternate Interior Angles Theorem Alternate Interior Angles Converse Theorem Alternate Exterior Angles Theorem Alternate Exterior Angles Converse Theorem Combine Like Terms Consecutive Interior Angles Theorem Consecutive Interior Angles Converse Theorem Corresponding Angles Postulate Corresponding Angles Converse Postulate	Division Property Distributive Property Given Linear Pair Postulate Multiplication Property Simplification Substitution Property Subtraction Property Transitive Property Vertical Angles Theorem
---	--

1. Please solve for  $x$  by completing the two column proof.



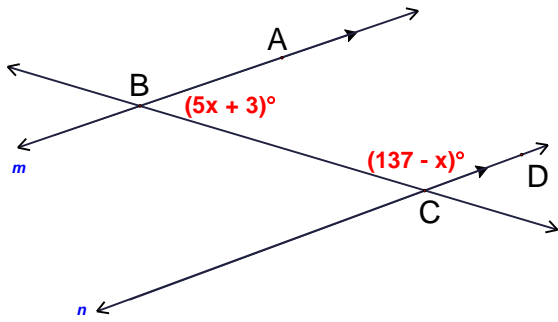
### Statements

### Reasons

- 1)  $m\angle ABC = (7x + 12)^\circ$ ,  
 $m\angle BDE = (9x - 24)^\circ$ ,  
 $m \parallel n$   
\_\_\_\_\_
- 2)  $7x + 12 = 9x - 24$   
\_\_\_\_\_
- 3)  $7x = 9x - 36$   
\_\_\_\_\_
- 4)  $-2x = -36$   
\_\_\_\_\_
- 5)  $x = 18$   
\_\_\_\_\_

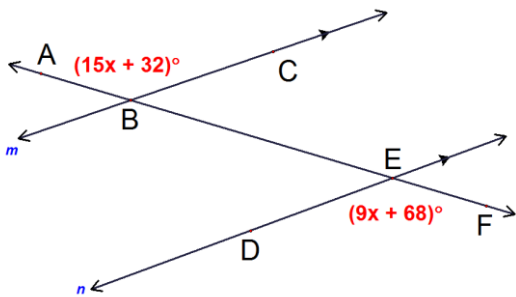
- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_

2. Please solve for x by completing the two column proof.



Statements	Reasons
1) $m\angle ABC = (5x+3)^\circ$ , $m\angle BCD = (137-x)^\circ$ , $m \parallel n$	1) _____
2) $(5x+3) + (137-x) = 180$	2) _____
3) $4x + 140 = 180$	3) _____
4) $4x = 40$	4) _____
5) $x = 10$	5) _____

3. Please find  $m\angle ABC$  by completing the two column proof.



Statements	Reasons
1) $m\angle ABC = (15x+32)^\circ$ , $m\angle DEF = (9x+68)^\circ$ , $m \parallel n$	1) _____
2) $15x+32 = 9x + 68$	2) _____
3) $6x + 32 = 68$	3) _____
4) $6x = 36$	4) _____
5) $x = 6$	5) _____
6) $m\angle ABC = 15(6)+32$	6) _____
7) $m\angle ABC = 122^\circ$	7) _____