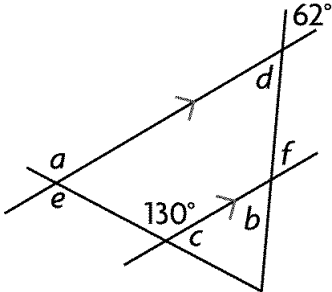


Properties of Angles and Triangles (answers at the back)

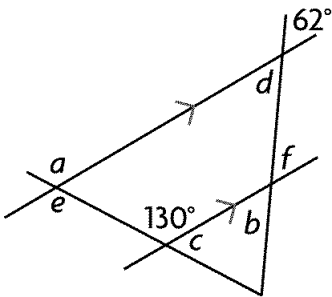
LG: I can find angles in parallel lines and transversals and justify

___ 1. Which statement about the angles in this diagram is false?



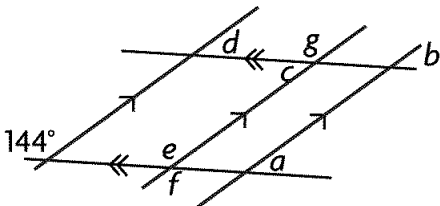
- a. $\angle a + \angle c = 180^\circ$
- b. $\angle e + \angle d = 180^\circ$
- c. $\angle d + \angle b = 124^\circ$
- d. $180^\circ - \angle f = 118^\circ$

___ 2. Which statement about the angles in this diagram is false?



- a. $\angle a = \angle e$
- b. $\angle c = \angle e$
- c. $\angle d = \angle b$
- d. $\angle b = \angle f$

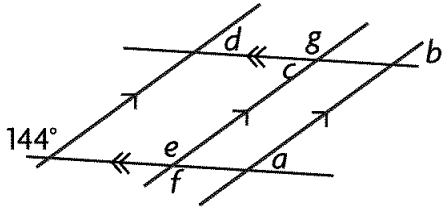
___ 3. Which statement about the angles in this diagram is false?



- a. $\angle e = \angle f$
- b. $\angle a = \angle b$
- c. $\angle d = \angle c$
- d. $\angle f = \angle a$

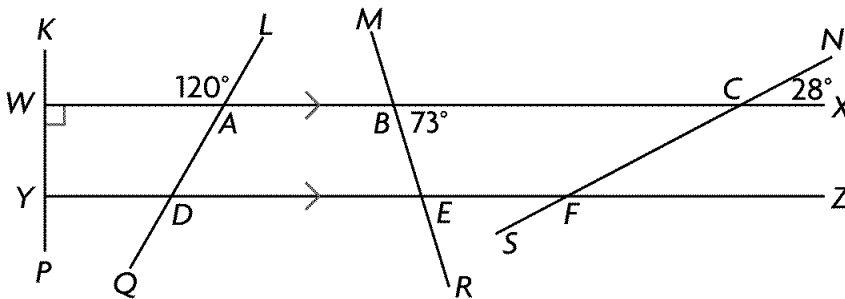
Properties of Angles and Triangles (answers at the back)

___ 4. Which statement about the angles in this diagram is false?



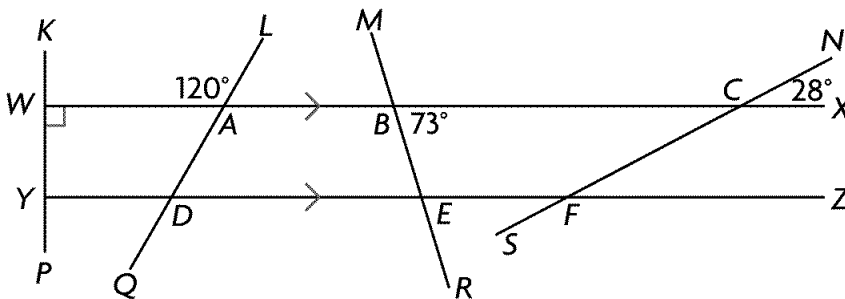
- a. $\angle g = 36^\circ$
- b. $\angle a = 36^\circ$
- c. $\angle c = 36^\circ$
- d. $\angle d = 36^\circ$

___ 5. Which angle property proves $\angle PYD = 90^\circ$?



- a. corresponding angles
- b. alternate interior angles
- c. alternate exterior angles
- d. supplementary angles

___ 6. Which angle property proves $\angle DAB = 120^\circ$?



- a. vertically opposite angles
- b. alternate exterior angles
- c. alternate interior angles
- d. corresponding angles

Properties of Angles and Triangles (answers at the back)

LG: I can create parallel lines using only a protractor

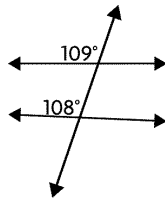
7. Create a set of parallel lines using only your protractor.

Explain using angles why your lines are parallel

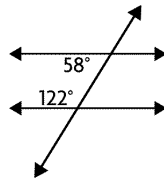
LG: I can determine if lines are parallel using angles

8. In which diagrams are two lines parallel?

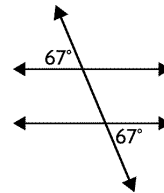
1.



2.



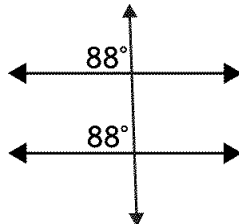
3.



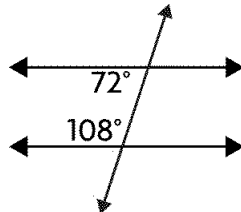
- a. Choices 1, 2, and 3
- b. Choice 1 and Choice 3
- c. Choice 2 and Choice 3
- d. Choice 1 only

9. In which diagrams are two lines parallel?

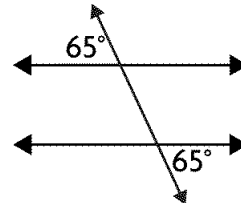
1.



2.



3.

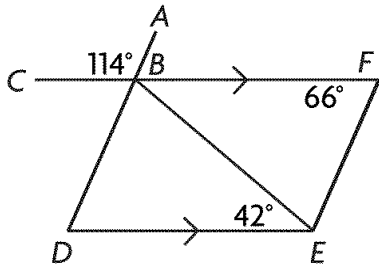


- a. Choice 2 and Choice 3
- b. Choice 1 only
- c. Choice 1 and Choice 3
- d. Choices 1, 2, and 3

Properties of Angles and Triangles (answers at the back)

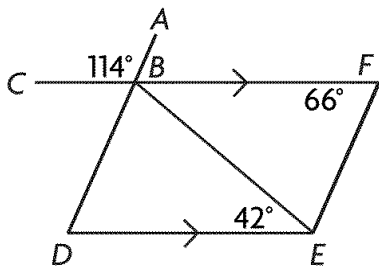
LG: I can PROVE relationships between parallel lines cut by a transversal, including triangle properties (2 learning goals)

10. Determine and justify the measure of $\angle ABF$.



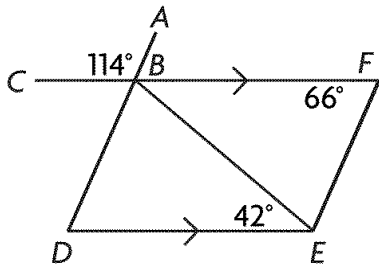
Math	Why

11. Determine the measure of $\angle BEF$.



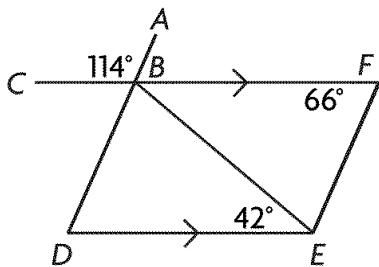
Properties of Angles and Triangles (answers at the back)

12. Determine and justify the measure of $\angle DBF$.



Math	Why

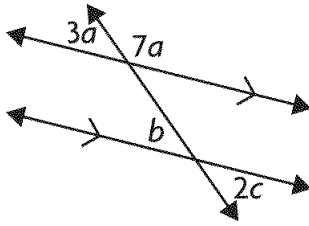
13. Determine and justify the measure of $\angle BDE$.



Math	Why

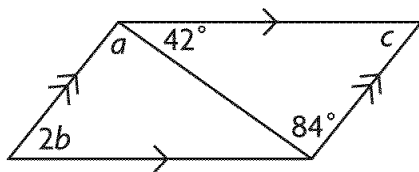
Properties of Angles and Triangles (answers at the back)

14. Determine and justify the values of a , b , and c .

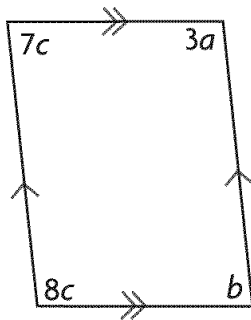


Math	Why

15. Determine the values of a , b , and c .

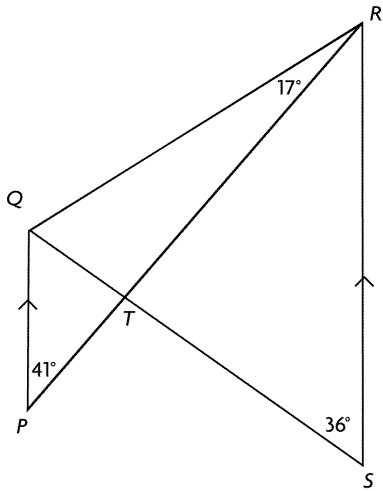


16. Determine the values of a , b , and c .



17. Determine and justify the measure of $\angle PQT$.

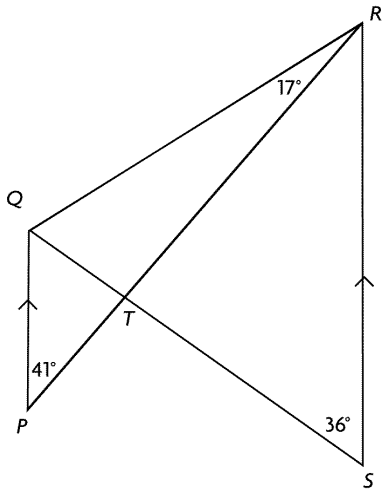
Properties of Angles and Triangles (answers at the back)



Math	Why

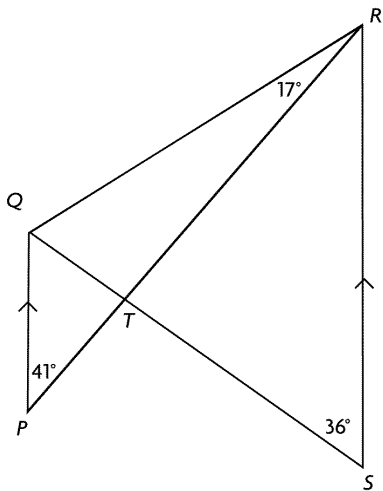
18. Determine and justify the measure of $\angle PQR$.

Properties of Angles and Triangles (answers at the back)



Math	Why

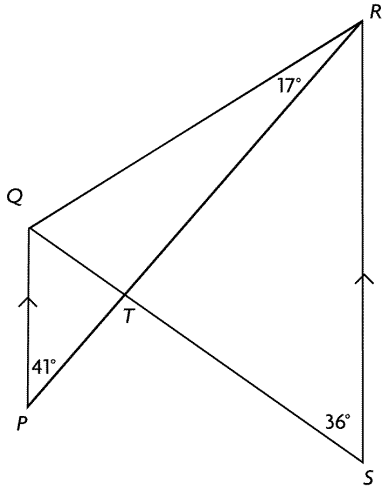
19. Determine the measure of $\angle TRS$.



Math	Why

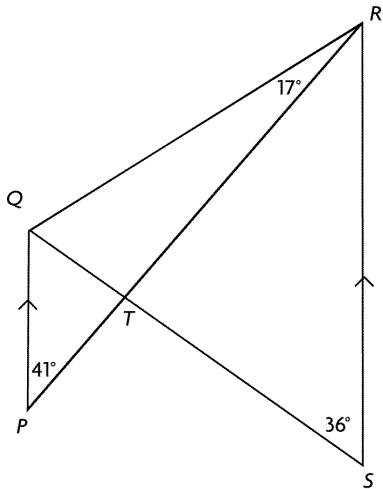
20. Determine the measure of $\angle PTQ$.

Properties of Angles and Triangles (answers at the back)



Math	Why

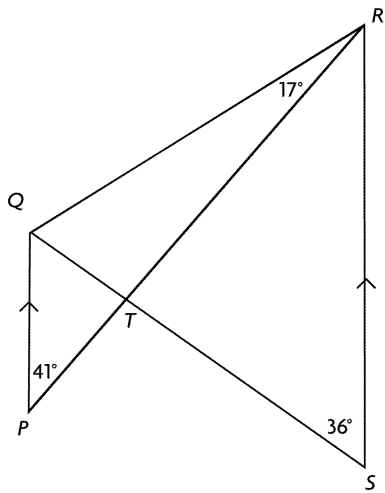
21. Determine the measure of $\angle RTQ$.



Math	Why

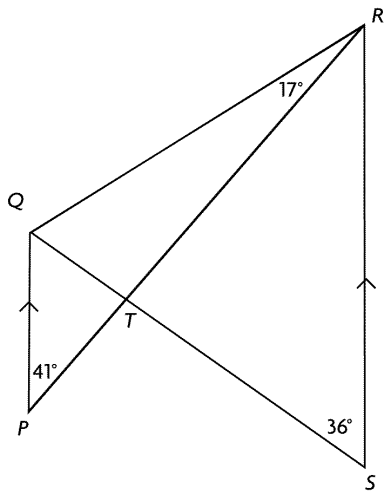
22. Determine the measure of $\angle QRS$.

Properties of Angles and Triangles (answers at the back)



Math	Why

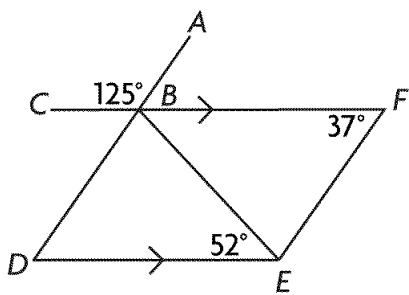
23. Determine the measure of $\angle RQT$.



Math	Why

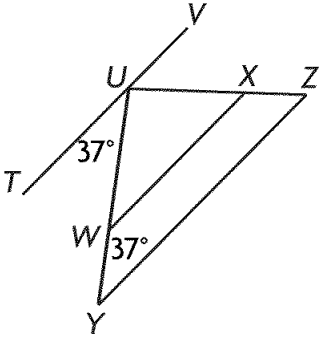
LG: I CAN DETERMINE IF LINES ARE PARALLEL

24. Are BD and FE parallel? Explain how you know.



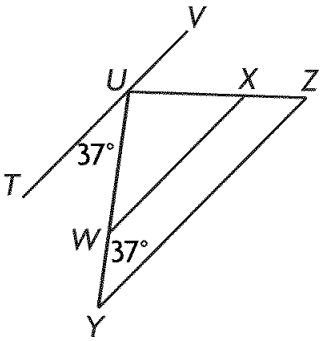
Properties of Angles and Triangles (answers at the back)

25. Prove: $TV \parallel YZ$



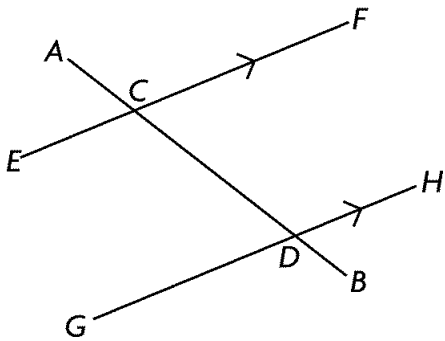
Math	Why

26. Given $\angle UWX = \angle WYZ$, prove: $TV \parallel WX$



Math	Why

27. Describe four different methods to prove $EF \parallel GH$.



Properties of Angles and Triangles (answers at the back)

Properties of Angles and Triangles Answer Section

1. ANS: B
2. ANS: B
3. ANS: D
4. ANS: A
6. ANS: A
7. ANS:
8. ANS: C

For the rest if the questions I have the angle measurement, but you have to PROVE how you get it (t-Chart)

10. ANS:
 $\angle ABF = 66^\circ$
11. ANS:
 $\angle BEF = 72^\circ$
12. ANS:
 $\angle DBF = 114^\circ$
13. ANS:
 $\angle BDE = 66^\circ$
14. ANS:
 $\angle a = 18^\circ, \angle b = 54^\circ, \angle c = 27^\circ$
15. ANS:
 $\angle a = 84^\circ, \angle b = 27^\circ, \angle c = 54^\circ$
16. ANS:
 $\angle a = 32^\circ, \angle b = 84^\circ, \angle c = 12^\circ$
17. ANS:
 $\angle PQT = 36^\circ$
18. ANS:
 $\angle PQR = 122^\circ$
19. ANS:
 $\angle TRS = 41^\circ$

TOP: Angles formed by parallel lines KEY: parallel lines| transversals| angles

20. ANS:
 $\angle PTQ = 103^\circ$

TOP: Angles formed by parallel lines KEY: parallel lines| transversals| angles

21. ANS:
 $\angle RTQ = 77^\circ$

Properties of Angles and Triangles (answers at the back)

22. ANS:

$$\angle QRS = 58^\circ$$

23. ANS:

$$\angle RQT = 86^\circ$$

24. ANS:

$$\angle ABC = \angle FBD = 125^\circ \text{ Vertically opposite angles}$$

$$\angle EFB + \angle FBD = 162^\circ$$

So, BD is not parallel to FE because the interior angles on the same side of the transversal are not supplementary.

25. ANS:

$$\angle TUY = 37^\circ, \text{ and } \angle UYZ = 37^\circ, \text{ so } TV \parallel YZ \text{ by equal alternate interior angles.}$$

26. ANS:

$$\angle TUY = 37^\circ \text{ and } \angle UWX = 37^\circ, \text{ by the transitive property.}$$

So, $TV \parallel WX$ by equal alternate interior angles.

27. ANS:

i) equal alternate interior angles, such as $\angle ECD = \angle CDH$

ii) equal corresponding angles, such as $\angle ACE = \angle CDG$

iii) equal alternate exterior angles, such as $\angle ACE = \angle HDB$

iv) interior angles on same side of transversal are supplementary, such as $\angle ECD + \angle CDG = 180^\circ$