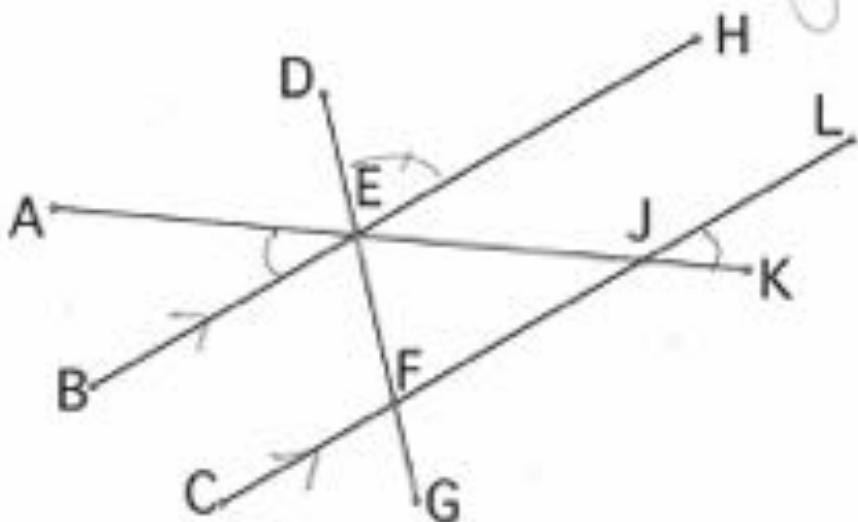


Score 112: Quiz 2

Key



The lines \overline{BH} and \overline{CL} are parallel. Refer to the diagram above when answering the questions on this page.

1. [3] TRUE/FALSE: If true, circle T and explain briefly why the statement is true. Otherwise, circle F.

T F $\angle AEB$ has the same measure as $\angle LJK$

AlTERNATING EXTERIOR ANGLES ARE CONGRUENT
 $\overline{BH} \parallel \overline{CL}$

T F $\angle AEB$ has the same measure as $\angle DEH$

2. [1] Find a pair of angles that are alternate interior angles.

$\angle BEF$ and $\angle EFS$

\angle

$\angle HEF$ and $\angle EFL$

$\angle BGS$ ^{or} $\angle ESL$

\angle

$\angle HES$ and $\angle ESF$

3. [1] Fill in the blank: If a line l was perpendicular to line \overline{BH} ,

then l would be perpendicular to \overline{CL} .

4. Angles $\angle ADB$, $\angle BDC$ and $\angle ABC$ are right angles in the diagram below. Use this diagram to answer the questions below.

- (a) [1] Identify two triangles that are similar

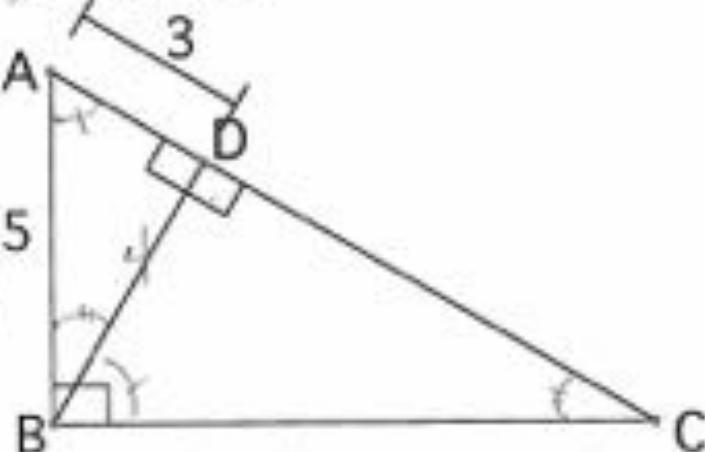
$$\triangle ABC \sim \triangle ADB \sim \triangle BDC$$

- (b) [1] Find the length of \overline{BD}

$$\begin{aligned} & \text{Using } \triangle \sim \triangle \\ & 3^2 + (\overline{BD})^2 = 5^2 \\ & (\overline{BD})^2 = 25 - 9 = 16 \\ & \overline{BD} = 4 \end{aligned}$$

- (c) [2] Find the length of \overline{DC} .

Since $\triangle \sim \triangle$



$\because \angle A$ and $\angle C$ add up to 90°

$$\frac{\overline{DB}}{\overline{AB}} = \frac{\overline{DC}}{\overline{BC}} \Rightarrow \frac{4}{3} = \frac{\overline{DC}}{4} \Rightarrow \overline{DC} = \frac{16}{3}$$

5. [2] Write down a conditional statement that is true but has a false converse.

T If an object is a square, then it is also a rectangle.

F If an object is a rectangle, then it is a square. every rectangle is a square

6. [2] Logic, as written by Aristotle in 384 BC (and discussed in class on 1/5), had three rules. Write down one of the rules.

1) Identity "a upside is a upside"

2) Excluded middle: statements have to be true or false

3) Statements cannot be both true and false. (non-contradiction)

7. [2] What trait about the cult of Pythagoras do you find the most interesting?

I think it is interesting that they thought the planets each had their own musical note. This originated the 'music of the spheres' idea. Although the idea to kill a man to hide the existence of irrational numbers is also interesting.

Pythagorean
mathematics
and
astronomy