2 cuts

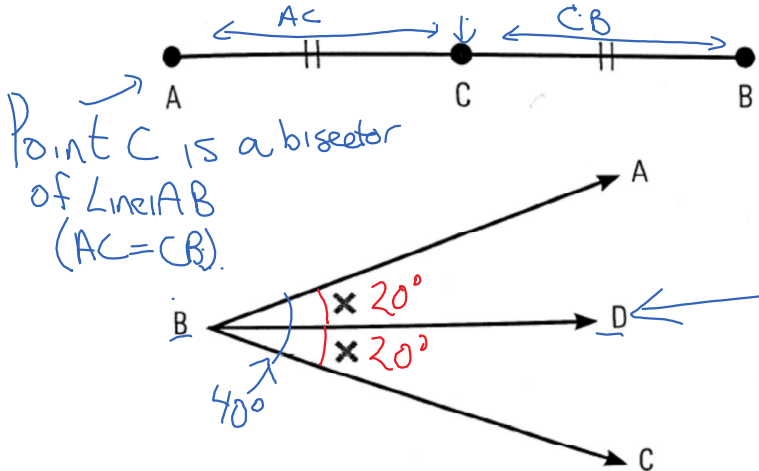## 5.2 – Angle Bisectors and Perpendicular Lines

Angle bisector: a segment, ray, or line that separates two halves of a bisected angle.
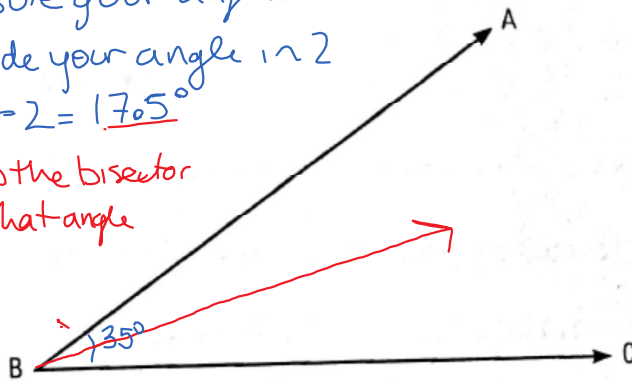
AC   CB

A   C   B

Point C is a bisector
of Line AB
(AC = CB).

Ex) Ray BD is an angle
bisector of ∠ABC

A

B   ×20°
    ×20°   D ← angle bisector

40°

C

Example 1:
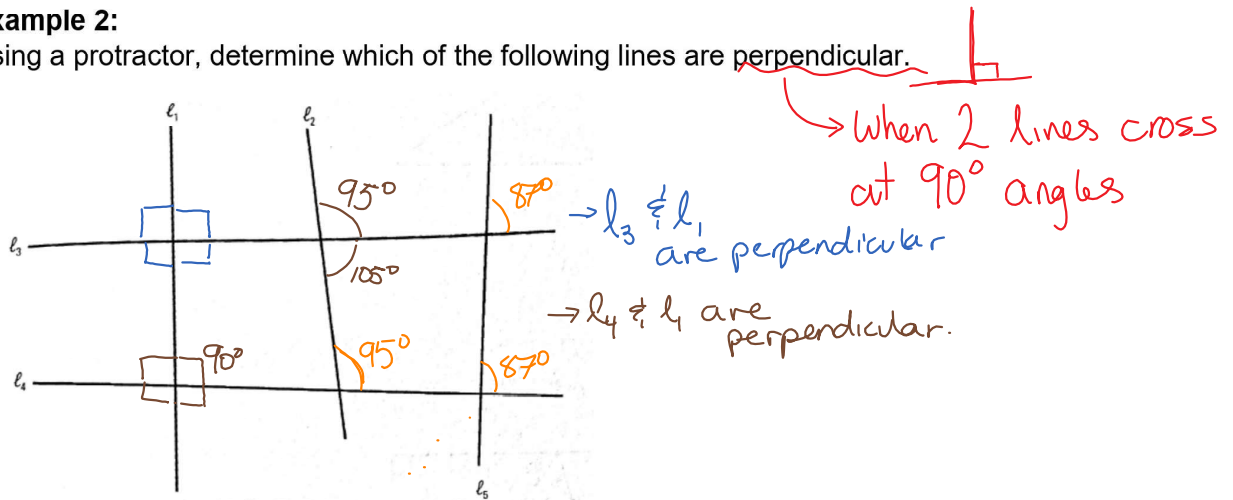Bisect <ABC using a straight edge and compass.

1→ measure your angle

2→ divide your angle in 2
    35° ÷ 2 = 17.5°

3 → Draw the bisector
    at that angle

A

35°

B   C

**Complete Build Your Skills #1-4 on pages 226-227.*

Example 2:
Using a protractor, determine which of the following lines are perpendicular.

→ When 2 lines cross at 90° angles

→ l_3 & l_1 are perpendicular

→ l_4 & l_1 are perpendicular.

Angles shown in figure: $95°$, $87°$, $105°$, $90°$, $95°$, $87°$

**Complete Build Your Skills #5-7 on page 228.

**Complete Practise Your New Skills #1-5 on pages 229-230.

5.3 – Non-Parallel Lines and Transversals.

Transversal: a line that intersects two of more lines.   *line t*

Corresponding angles: two angles that occupy the same relative position at two different intersections   *∠1 and ∠5*

Vertically opposite angles: angles created by intersecting lines that share only a vertex   *∠1 and ∠3*

Alternate interior angles: angles in opposite positions between two lines intersected by a transversal and also on alternate sides of the same transversal   *∠4 and ∠6*

Alternate exterior angles: angles in opposite positions outside two lines intersected by a transversal   *∠2 and ∠8*

t ← Transversal

Interior angles ⇒ ∠3 and ∠6

Exterior angle ⇒ ∠2 and ∠7