Name: _____ Date: _____ Row: _____ Period: _____

NOTES SECTION 10.5: SPECIAL SEGMENTS

CONSTRUCTION 12

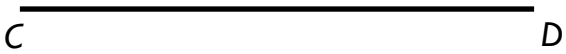
Given a segment, divide the segment into a given number of congruent parts.

EXAMPLE 1

Divide $\overline{AB}$ into three congruent segments.

YOUR TURN

Divide $\overline{CD}$ into three congruent segments.



CONSTRUCTION 13

Given three segments, construct a fourth segment so that the four segments are in proportion.

EXAMPLE 2

Given segments with lengths *a*, b, and *c*, construct a segment of length *x* such that $\frac{a}{b} = \frac{c}{x}$.

a *b* *c*

YOUR TURN

Given segments with lengths *a*, b, and *c*, construct a segment of length *x* such that $\frac{a}{b} = \frac{c}{x}$.

a *b* *c*

CONSTRUCTION 14

Given two segments, construct their geometric mean.

EXAMPLE 3

Given segments with lengths *a* and *b*, construct a segment of length *x* such that $\frac{a}{x} = \frac{x}{b}$ (or $x = \sqrt{ab}$).

a *b*

YOUR TURN

Given segments with lengths *a* and *b*, construct a segment of length *x* such that $\frac{a}{x} = \frac{x}{b}$ (or $x = \sqrt{ab}$).

a *b*

HOW TO CONSTRUCT AN EGG

Follow the directions and the example to construct your own egg below.

1) Draw any $\overline{AB}$ (leave room above and below the segment for your construction)
2) Construct the perpendicular bisector of $\overline{AB}$
3) Label midpoint as O
4) Now draw the circle with center O and OA as the radius
5) Label the bottom point of intersection between the circle and the perpendicular bisector C
6) Draw $\overrightarrow{AC}$ and $\overrightarrow{BC}$
7) With A as the center and AB as the radius, construct $\overset{\frown}{BE}$
8) With B as the center and AB as the radius, construct $\overset{\frown}{AF}$
9) With C as the center and CF as the radius, construct $\overset{\frown}{FE}$