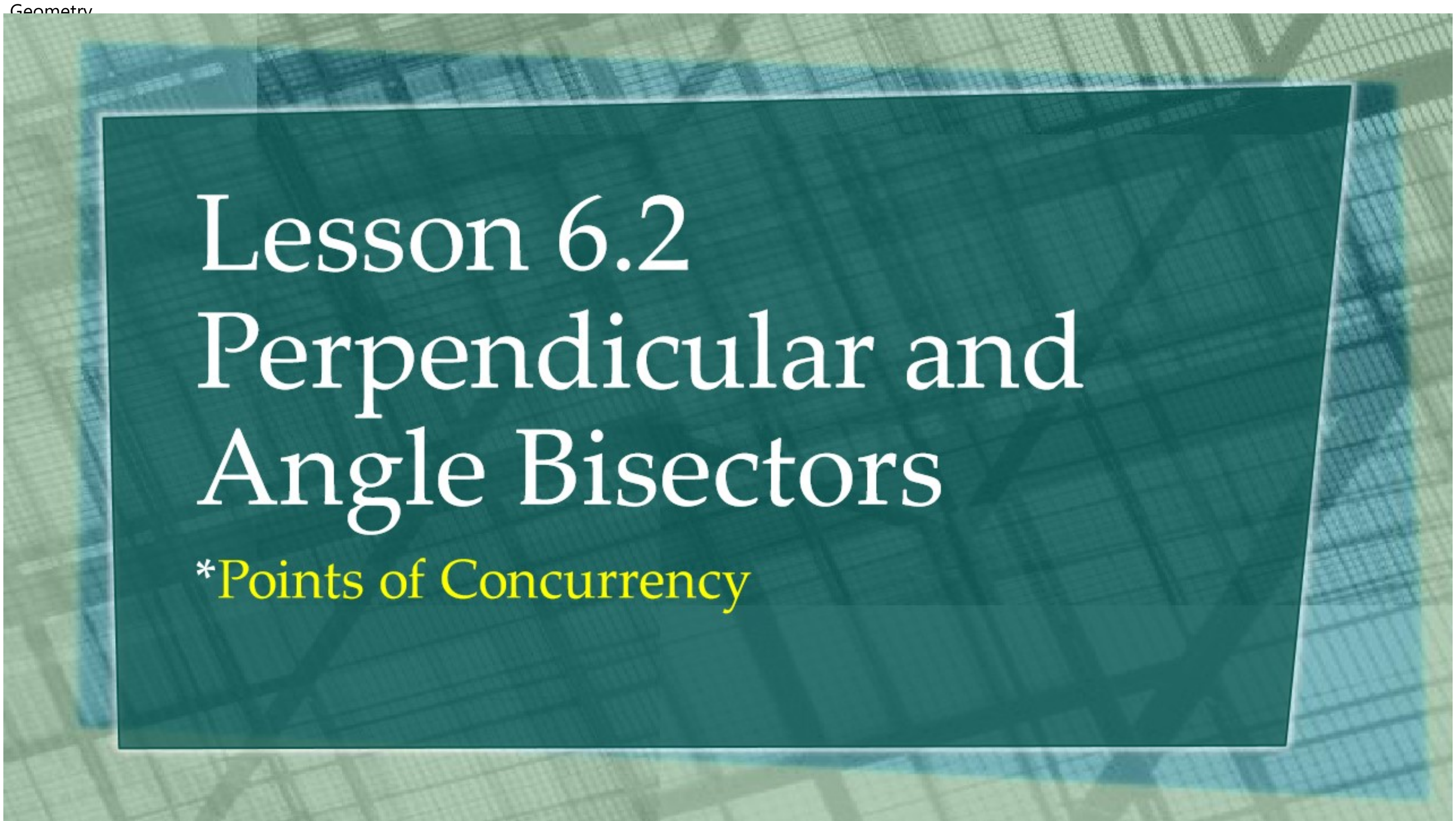
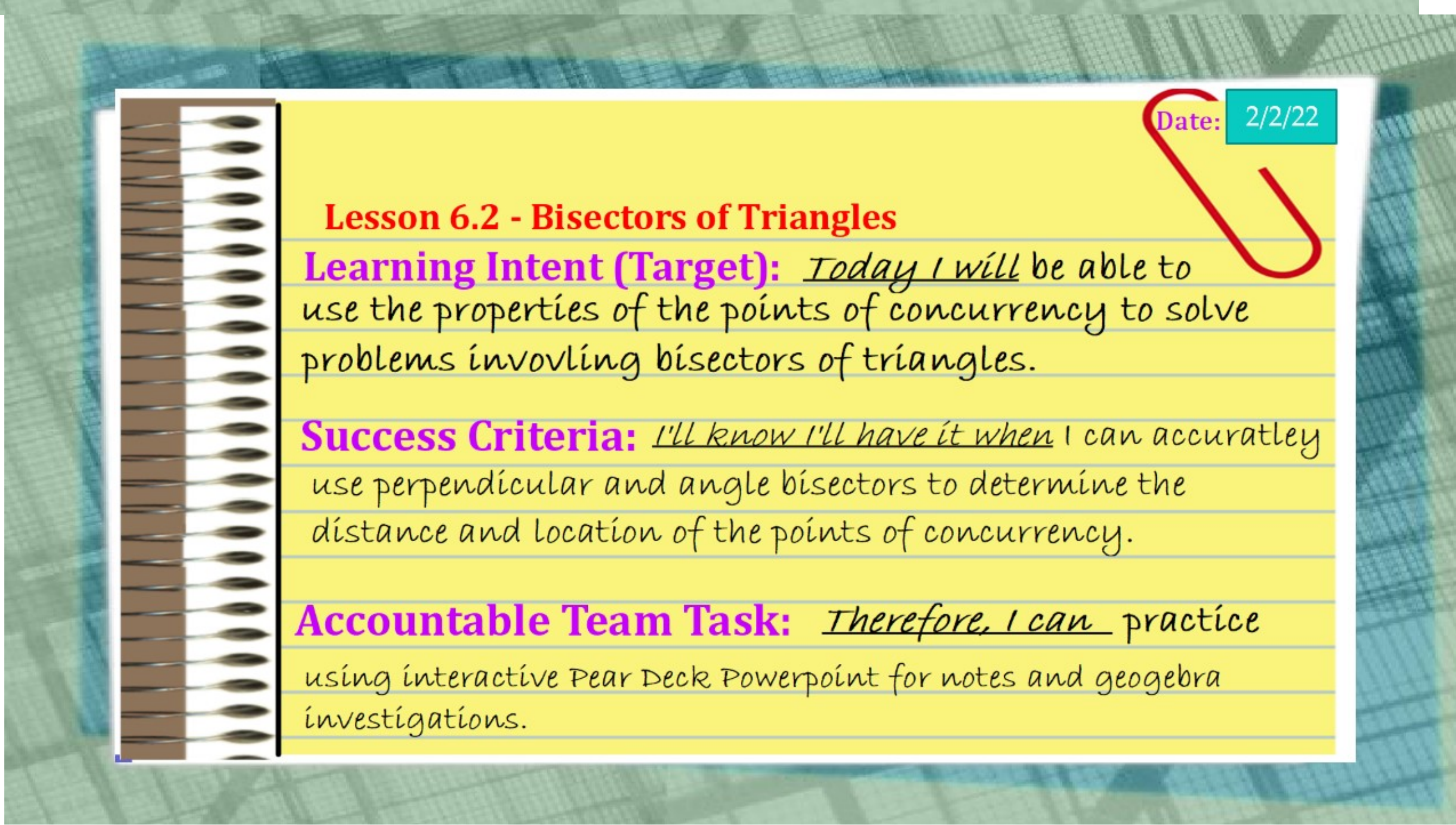
Lesson 6.2 Perpendicular and Angle Bisectors – Points of Concurrency

Tuesday, February 1, 2022 6:18 PM

Pear Deck Lesson
https://app.peardeck.com/student/tjpuevrlg

Lesson 6.2
Geometry



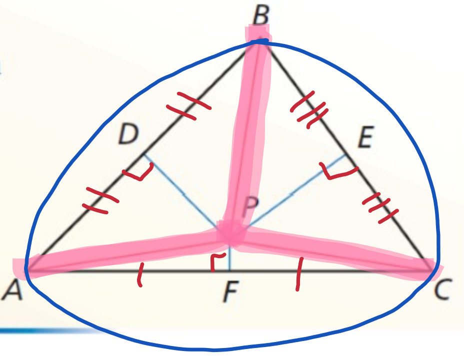


Theorem 6.5 Circumcenter Theorem

The circumcenter of a triangle is equidistant from the vertices of the triangle.

If $\overline{PD}$, $\overline{PE}$, and $\overline{PF}$ are perpendicular bisectors, then $PA = PB = PC$.

Proof p. 310



perp. bisectors

Find the coordinates of the circumcenter of $\triangle ABC$ with vertices $A(0, 3)$, $B(0, -1)$, and $C(6, -1)$.

$x_1\ y_1 \qquad x_2\ y_2$

Right Triangle

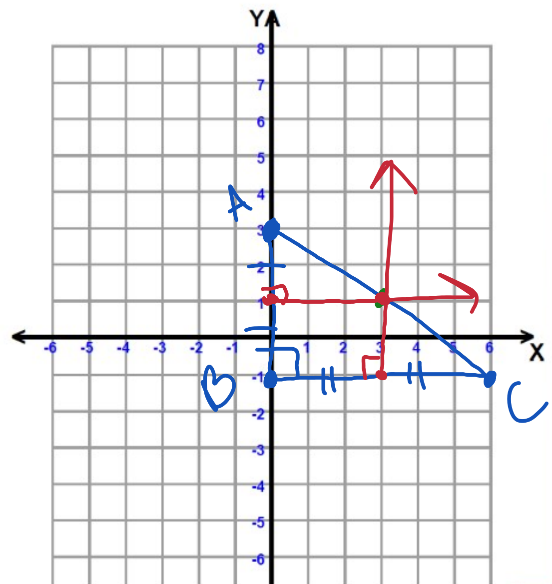
Hypotenuse Midpoint

$0+6 \qquad 3+-1$

$$\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}$$

$$\frac{6}{2}, \frac{2}{2}$$

$(3, 1)$



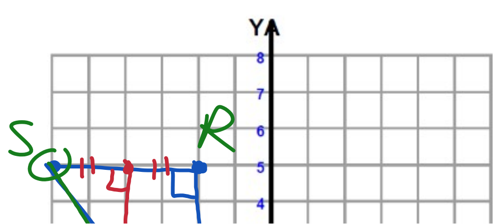
Find the coordinates of the circumcenter of the triangle with the given vertices.

$x_1\ y_1 \qquad x_2\ y_2$

2. $R(-2, 5)$, $S(-6, 5)$, $T(-2, -1)$

Midpoint Hypotenuse

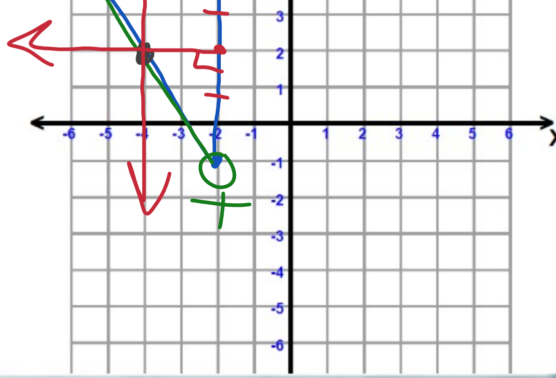
$-6+-2 \qquad 5+-1$



$\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}$

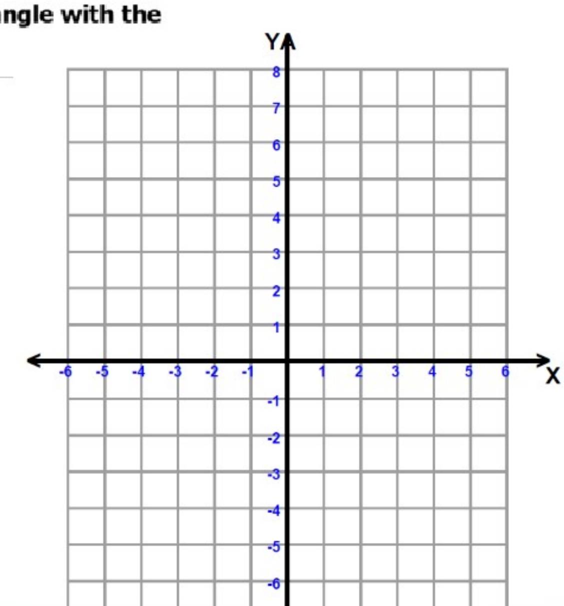
$-\frac{8}{2}, \frac{4}{2}$

$(-4, 2)$



Find the coordinates of the circumcenter of the triangle with the given vertices.

3. $W(-1, 4)$, $X(1, 4)$, $Y(1, -6)$



Students, draw anywhere on this slide!

Pear Deck Interactive Slide
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Theorem 6.6 Incenter Theorem

The incenter of a triangle is equidistant from the sides of the triangle.

If $\overline{AP}$, $\overline{BP}$, and $\overline{CP}$ are angle bisectors of $\triangle ABC$, then $PD = PE = PF$.

Proof Ex. 38, p. 317