

# Mr. Tu's Excellent Examples

## Module 8 Architect



### Applying Lesson 8.1

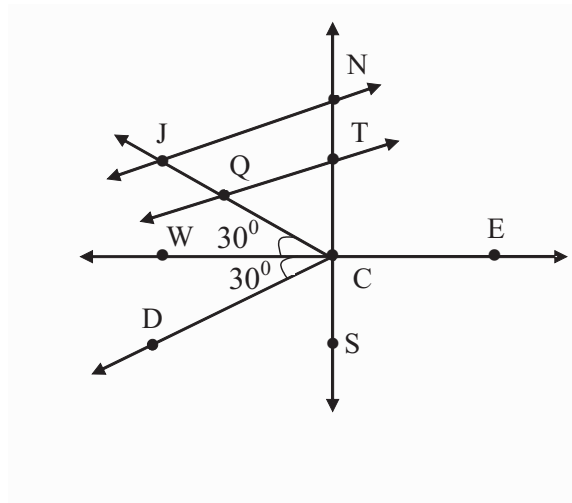
1. When an architect wants to identify a specific location on a drawing, he or she may use a small dot to represent this location. In terms of geometry, what does this small dot represent?

2. When showing the corridor that runs due north and south, Stephen Johnson was disregarding the fact that the earth has curvature; therefore, all the points continuing infinitely both north and south that run along the centerline of the corridor would make what geometric figure? What geometric figure would be represented by only those points contained on the centerline of the corridor within the building?

- On the western end of the Griffith Observatory, a point has been established from which to view the sunset. The architects placed a line segment in the concrete which begins at this point and continues along the centerline towards where the sun would be located during the winter solstice. This line segment represents a ray that travels infinitely in that direction. Another line segment begins at the same point and travels along the ray towards where the sun will set during the summer solstice. These two rays begin at the same point and form what geometric shape? If we name the point at which these rays begin  $V$  for viewing point and a point along the ray to the south  $W$  for Winter Solstice and a point along the ray to the north  $S$  for Summer Solstice, how would we name the angle that is formed by these two rays?



To answer the following questions, use the picture on the right.  $C$  is the center point,  $N$  represents due north of the center,  $S$  represents due south of the center,  $E$  represents due east of the center and  $W$  represents due west of the center.



**Applying Lesson 8.2**

- What type of angle is created by the rays  $\overrightarrow{CN}$  and  $\overrightarrow{CE}$ ?
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- What type of lines are represented by the line that travels north and south  $NCS$  and the line that travels east and west  $ECW$ ?



3. In June the sunset in Los Angeles is about  $30^\circ$  degrees north of due west.  $\overrightarrow{CJ}$  is the ray that runs towards the June sunset from the center point on the drawing. What type of angle is formed by the ray that runs due west and by the ray that runs toward the sunset in June?

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4. In December the sunset is about  $30^\circ$  to the south of due west.  $\overrightarrow{CD}$  is the ray that runs toward the December sunset from the center point on the drawing. The angle formed between due west and the December sunset and the angle formed between due west and the June sunset are called what type of angles since their measurements are the same?

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### Applying Lesson 8.3

1. Look at  $\angle WCJ$  and  $\angle JCN$ . Are these angles supplementary or complementary? Explain how you know?

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2. Look at  $\angle SCD$  and  $\angle DCN$ . Are these angles complementary or supplementary? Explain how you know?

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### Applying Lesson 8.4

1. If you drew a line segment from point J to point D, you would form  $\triangle DCJ$ . The distances from C to D, from C to J, and from J to D are the same. What type of triangle is  $\triangle DCJ$ ? Why?

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2. If you drew a line from point N to point E you would form  $\triangle ECN$ . Based on the measure of  $\angle ECN$ , what type of triangle is this? Explain why.

### Applying Lesson 8.5

1. If you draw a line segment from point J to point D and a line segment from point D to point S, you create  $\triangle CJD$  and  $\triangle CDS$ . If  $\overline{CJ}$  is equal to  $\overline{CS}$ , what do we know about  $\triangle CJD$  and  $\triangle CDS$ ? Justify your answer.

2. What is the measure of  $\angle JCD$  and  $\angle SCD$ ? Justify your answer.

### Applying Lesson 8.6

1. If  $\overleftrightarrow{JN}$  is parallel to  $\overleftrightarrow{QT}$ , is  $\triangle CJN$  similar to  $\triangle CQT$ ? Justify your answer.