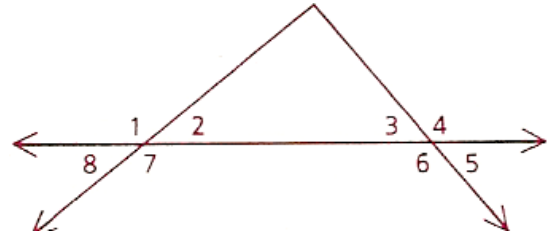


2.6 – COMPLEMENTARY & SUPPLEMENTARY ANGLES

1. Given: $m\angle 4 = 131$ and $\angle 2$ is complementary to $\angle 3$
Find the measures of all the numbered angles.



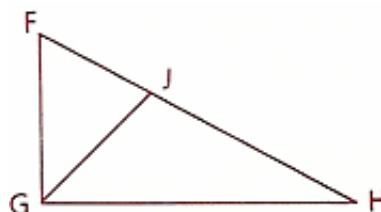
2. One of two supplementary angles is four times the other. Write and solve an equation that represents this situation. Find the measure of each angle.
3. One of two complementary angles is 20° larger than the other. Write and solve an equation that represents this situation. Find the measure of each angle.
4. The complement of an angle is 24° greater than twice the angle. Write and solve an equation that represents this situation. Find the measure of the complement.
5. The measure of the supplement of an angle exceeds 3 times the measure of the complement of the angle by 10. Write and solve an equation that represents this situation. Find the measure of the complement.
6. When one-half the supplement of an angle is added to the complement of the angle, the sum is 120° . Write and solve an equation that represents this situation. Find the measure of the complement.
7. If three times the supplement of an angle is subtracted from seven times the complement of the angle, the answer is the same as that obtained by trisecting a right angle. Write and solve an equation that represents this situation. Find the measure of the supplement.
8. Given: $\angle 1$ is complementary to $\angle 2$
 $m\angle 1 = x^2 - 4x$ & $m\angle 2 = 3x$
Find the value of x , that makes sense and then find the measure of each angle.
9. Given: $\angle 3$ is supplementary to $\angle 4$
 $m\angle 1 = 7x^2 - 60$ & $m\angle 2 = 3x^2 - 20x$
Find the value of x , that makes sense and then find the measure of each angle.

10. Given: $\angle A$ is complementary to $\angle B$, $\angle C$ is complementary to $\angle B$
- What can you conclude from the given information? Explain your reasoning.
 - If $m\angle A = 3x + y$, $m\angle B = x + 4y + 2$, and $m\angle C = 3y - 3$, set up and solve a system of equations to find the values of x and y . What is $m\angle B$?

Two-Column Proof Problems:

11. Given: $\angle F$ is comp. to $\angle FGJ$
 $\angle H$ is comp. to $\angle HGJ$
 \overrightarrow{GJ} bisects $\angle FGH$

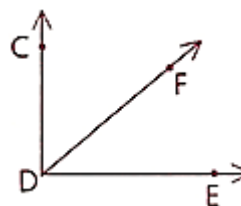
Prove: $\angle F \cong \angle H$



STATEMENTS

REASONS

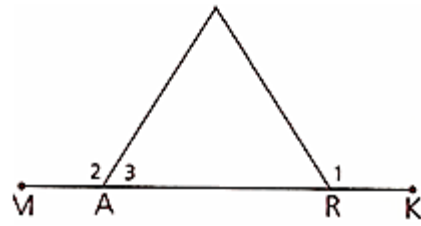
12. Given: $\overrightarrow{CD} \perp \overrightarrow{DE}$
 Prove: $\angle CDF$ is comp. to $\angle FDE$



STATEMENTS

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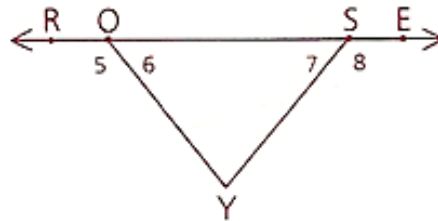
13. Given: $\angle 1 \cong \angle 2$
 Prove: $\angle 1$ is supp. to $\angle 3$



STATEMENTS

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14. Given: $\angle 6 \cong \angle 7$
 Prove: $\angle 5 \cong \angle 8$



STATEMENTS

REASONS