5.

B and C trisect $\overline{AD}$.

a. Find the coordinates of B and C

```
A        B        C        D
•————————•————————•————————•
-5                         16
```

b. Find AC

.

6.

Is M the midpoint of $\overline{OP}$?

```
     x + 8          2x - 6
•————————————•————————————•        OP = 44
O            M            P
```

7.

$\overrightarrow{GJ}$ bisects ∠FGH.

Find m∠FGJ


```
F \        J ↗
   \ 3x - 5  /
    \      /
     \   x + 27
      \ /————————→
      G        H
```
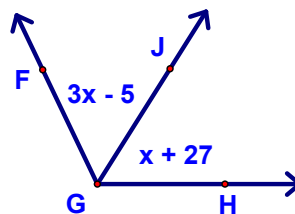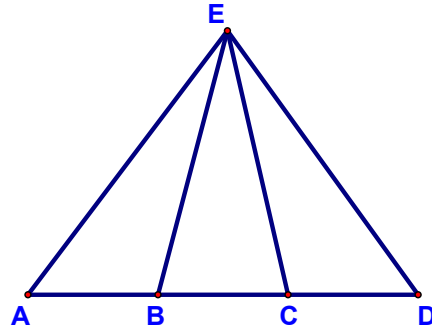
8.

B and C are trisection points of $\overline{AD}$, and AD = 12

    a. Find AB

    b. Find AC

    c. If AB = x + 3, solve for x.
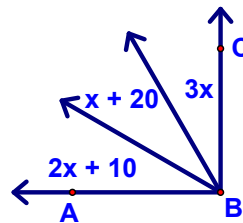
    d. If AB = x + 3 and AE = 3x + 6, find AE.

    e. What segment is C the midpoint of?

    f. Do $\overrightarrow{EB}$ and $\overrightarrow{EC}$ trisect $\angle AED$?

9.

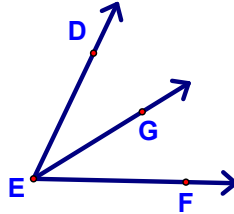**If m$\angle$ABC = 90°, has $\angle$ABC been trisected?**

The concluding reason in each of the following two proofs is incorrect. Write the correct reason.

10.

Given: ∠DEG ≅ ∠FEG

Prove: $\overrightarrow{EG}$ bisects ∠DEF

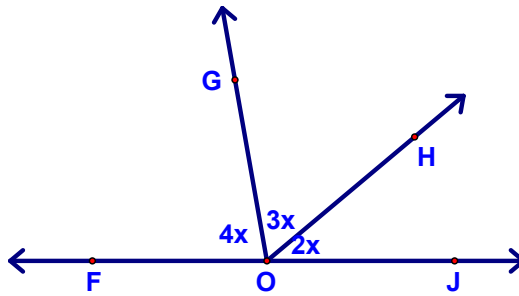| Statements	Reasons
1. ∠DEG ≅ ∠FEG	1. Given
2. $\overrightarrow{EG}$ bisects ∠DEF	2. If a ray divides an angle into two angles, the ray bisects the angle (*What is the correct reason?*)

11.

Given: $\overline{KJ}$ ≅ $\overline{HJ}$

Prove: J is the midpoint of $\overline{HK}$
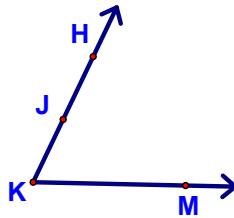
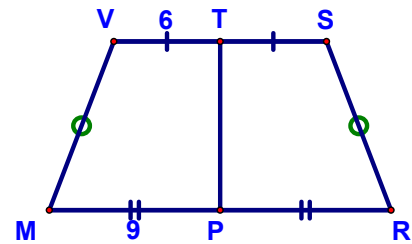| Statements	Reasons
1. $\overline{KJ}$ ≅ $\overline{HJ}$	1. Given
2. J is the midpoint of $\overline{HK}$	2. If a point is the midpoint of a segment, it divides the segment into two ≅ segments (*What is the correct reason?*)

18.

Find m∠FOG
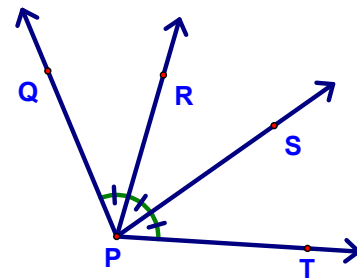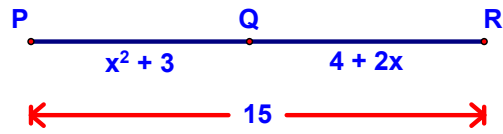

19.

Perimeter of MRSV = 62

Find VM

20.

a. **If m∠RPS = 23°50', find m∠QPT**

b. **If m∠QPT = 120°48'30", find m∠QPS**

21.

a. Find the value of x.

P ● ————————— Q ● ————————— ● R

$x^2 + 3$ 4 + 2x

←———————— 15 ————————→

b. Is Q the midpoint of $\overline{PR}$?

22.

Find m∠ROS

N   P

3x - 4y

R

x - y

y - 10

O   S
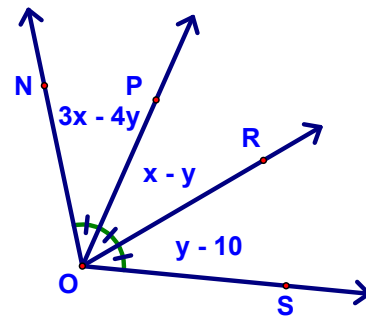
24.

The measures of two angles are in the ratio 5:3. The measure of the larger angle is 30 greater than half the difference of the angles. Find the measure of each angle.