Inscribed Angles and Intercepted Arcs

1.
$$x = \frac{1}{2}(75^{\circ})$$
 \checkmark

$$x = 37.5^{\circ}$$
 \checkmark
2. $x = \frac{1}{2}(38^{\circ})$

2.
$$x = \frac{1}{2}(38^{\circ}) \checkmark$$

$$x = 19^{\circ} \checkmark$$

3.
$$x = \frac{1}{2}(70^{\circ}) \checkmark$$
$$x = 35^{\circ} \checkmark$$

4.
$$x = \frac{1}{2}(82^{\circ})\checkmark$$
$$x = 41^{\circ}\checkmark$$
$$y = \frac{1}{2}(82^{\circ})\checkmark$$
$$y = 41^{\circ}\checkmark$$

$$y = 41^{\circ}$$
 ✓
5. $x + 72 = 180^{\circ}$ ✓
$$x = 180^{\circ} - 72^{\circ}$$
 ✓
$$x = 108^{\circ}$$
 ✓
$$y + 90 = 180^{\circ}$$
 ✓

$$y = 180^{\circ} - 90^{\circ} \checkmark$$

$$y = 90^{\circ} \checkmark$$

6.
$$x = 360^{\circ} - (100^{\circ} + 60^{\circ}) \checkmark$$

 $x = 360^{\circ} - 160^{\circ} \checkmark$
 $x = 200^{\circ} \checkmark$
 $y = \frac{1}{2}(200^{\circ}) \checkmark$
 $y = 100^{\circ} \checkmark$

7.
$$(2x+1)^{\circ} = \frac{1}{2}(151^{\circ}) \checkmark$$

 $2(2x+1)^{\circ} = 151^{\circ} \checkmark$
 $4x+2=151^{\circ} \checkmark$
 $4x=151^{\circ}-2^{\circ} \checkmark$

$$4x = 131^{\circ} \checkmark$$

$$4x = 149^{\circ} \checkmark$$

$$x = 37.25^{\circ} \checkmark$$

8.
$$x = \frac{1}{2}(115^{\circ})$$
 \checkmark $x = 57.5^{\circ}$ \checkmark

1.
$$m\angle OGA = \frac{1}{2}m\widehat{OA} \checkmark$$

 $75^{\circ} = \frac{1}{2}m\widehat{OA} \checkmark$

$$2(75^{\circ}) = \widehat{mOA} \checkmark$$

$$\widehat{mOA} = 150^{\circ} \checkmark$$

2.
$$\widehat{mOG} = 360^{\circ} - (150^{\circ} + 160^{\circ}) \checkmark$$

 $\widehat{mOG} = 360^{\circ} - 310^{\circ} \checkmark$
 $\widehat{mOG} = 50^{\circ}$

$$| mOG = 50^{\circ} | \checkmark$$
3. $m \angle GOA = \frac{1}{2} mAG \checkmark$

$$m \angle GOA = \frac{1}{2} (160^{\circ}) \checkmark$$

$$m \angle GOA = 80^{\circ} | \checkmark$$

$$\boxed{m \angle GOA = 80^{\circ}} \checkmark$$
4. $m \angle GAO = \frac{1}{2}m\widehat{OG} \checkmark$

$$m \angle GAO = \frac{2}{2}(50^{\circ}) \checkmark$$
$$m \angle GAO = 25^{\circ} \checkmark$$

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$$x = \frac{1}{2}(75^{\circ})$$
 \checkmark $x = 37.5^{\circ}$

2.
$$x = \frac{1}{2}(38^\circ)\checkmark$$
$$x = 19^\circ \checkmark$$

3.
$$x = \frac{1}{2}(70^{\circ})\checkmark$$
$$x = 35^{\circ}$$

4.
$$x = \frac{1}{2}(82^{\circ})\sqrt{1}$$
 $x = 41^{\circ}$

$$y = \frac{1}{2}(82^{\circ})\checkmark$$

$$y = 41^{\circ}$$

5.
$$x + 72 = 180^{\circ} \checkmark$$

 $x = 180^{\circ} - 72^{\circ} \checkmark$
 $x = 108^{\circ} \checkmark$
 $y + 90 = 180^{\circ} \checkmark$

$$y = 180^{\circ} - 90^{\circ} \checkmark$$

$$y = 90^{\circ} \checkmark$$
6. $x = 360^{\circ} - (100^{\circ} + 60^{\circ}) \checkmark$

$$x = 360^{\circ} - 160^{\circ} \checkmark$$

$$x = 200^{\circ} \checkmark$$

$$y = \frac{1}{2}(200^{\circ}) \checkmark$$

$$y = 100^{\circ} \checkmark$$

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$$x = \frac{1}{2}(115^{\circ})$$
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$$m\angle OGA = \frac{1}{2}m\widehat{OA} \checkmark$$

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$$m \angle GAO = \frac{1}{2}m\widehat{OG} \checkmark$$

 $m \angle GAO = \frac{1}{2}(50^{\circ}) \checkmark$
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Inscribed Angles and Intercepted Arcs

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$$m\angle OGA = \frac{1}{2}m\widehat{OA} \checkmark$$
 $75^{\circ} = \frac{1}{2}m\widehat{OA} \checkmark$
 $2(75^{\circ}) = m\widehat{OA} \checkmark$

2. $m\widehat{OG} = 360^{\circ} - (150^{\circ} + 160^{\circ}) \checkmark$
 $m\widehat{OG} = 50^{\circ}$

3. $m\angle GOA = \frac{1}{2}m\widehat{AG} \checkmark$
 $m\angle GOA = 80^{\circ}$

4. $m\angle GAO = \frac{1}{2}m\widehat{OG} \checkmark$
 $m\angle GAO = \frac{1}{2}(50^{\circ}) \checkmark$

 $m\angle \overline{GAO} = 25^{\circ}$

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 $y+90=180^{\circ}$

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2. $m\widehat{OG} = 360^{\circ} - (150^{\circ} + 160^{\circ}) \checkmark$
 $m\widehat{OG} = 360^{\circ} - 310^{\circ} \checkmark$

$$\boxed{m\widehat{OG} = 50^{\circ}} \checkmark$$

3.
$$m\angle GOA = \frac{1}{2}m\widehat{AG}$$
 \checkmark
 $m\angle GOA = \frac{1}{2}(160^{\circ})$ \checkmark
 $m\angle GOA = 80^{\circ}$

4.
$$m \angle GAO = \frac{1}{2}m\widehat{OG} \checkmark$$

 $m \angle GAO = \frac{1}{2}(50^{\circ}) \checkmark$
 $m \angle GAO = 25^{\circ} \checkmark$