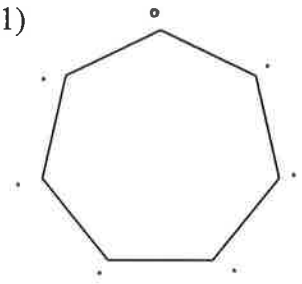
Geometry Name_____

Angle sum, interior measure, and exterior measure

Date_____ Period____

Find the interior angle sum for each polygon. Round your answer to the nearest tenth if necessary.

1) $S = 180(n-2)$



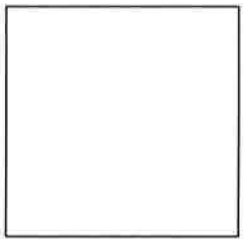
$n = 7$

$S = 180(n-2)$

$S = 180(7-2)$

$S = 900°$

2)



$n = 4$

$S = 180(n-2)$

$S = 180(4-2)$

$S = 360°$

3) regular 14-gon

4) regular 18-gon $n = 18$

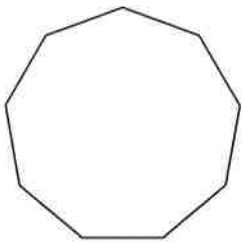
$S = 180(n-2)$

$S = 180(18-2)$

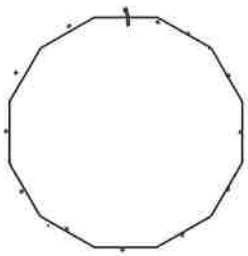
$S = 2880°$

Find the measure of one interior angle in each polygon. Round your answer to the nearest tenth if necessary.

5)



6)



$n = 12$

$S = 180(n-2)$

$S = 180(12-2)$

$S = 1800$

$m \text{ int } \angle = \frac{S}{n}$

$= \frac{1800}{12}$

$m \text{ int } \angle = 150°$

7) regular 23-gon

8) regular pentagon $n = 5$

$S = 180(n-2)$

$S = 180(5-2)$

$S = 540$

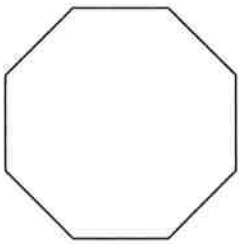
$m\text{ int } \angle = \frac{S}{n}$

$= \frac{540}{5}$

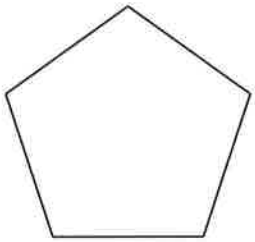
$m\text{ int } \angle = 108°$

Find the measure of one exterior angle in each polygon. Round your answer to the nearest tenth if necessary.

9)



10)



$n = 5$

$m\text{ ext } \angle = \frac{360}{n}$

$= \frac{360}{5}$

$m\text{ ext } \angle = 72°$

11) regular 14-gon

12) regular decagon $n = 10$

$m\text{ ext } \angle = \frac{360}{n}$

$m\text{ ext } \angle = \frac{360}{10}$

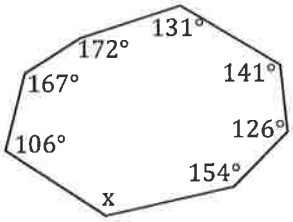
$m\text{ ext } \angle = 36°$

Name: _____

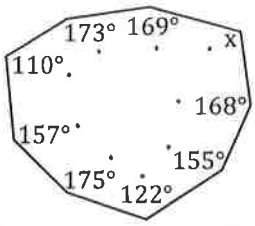
Period: _____

For these.... find the missing angle or angles.

25.



26.



$n = 9$

$S = 180(n-2)$

$S = 180(9-2)$

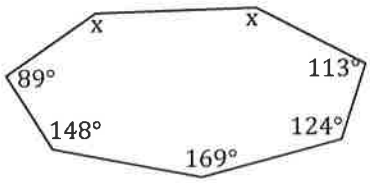
$S = 1260$

$169 + 173 + 110 + 157 + 175 + 122 + 155 + 168 + x = 1260$

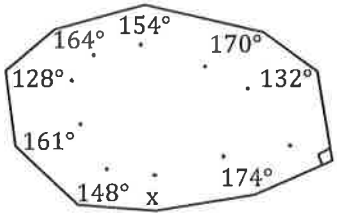
$1229 + x = 1260$

$\boxed{x = 31°}$

27.



28.



$n = 10$

$S = 180(n-2)$

$S = 180(10-2)$

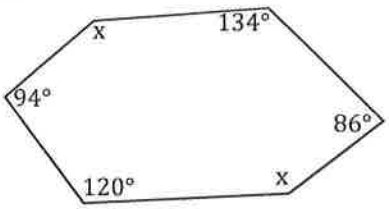
$S = 1440$

$174 + 90 + 132 + 170 + 154 + 164 + 128 + 161 + 148 + x = 1440$

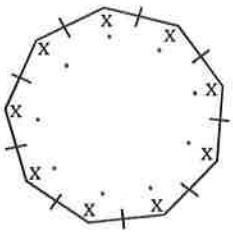
$1321 + x = 1440$

$\boxed{x = 119°}$

29.



30.



$n = 9$

$S = 180(n-2)$

$S = 180(9-2)$

$S = 1260$

$9x = 1260$

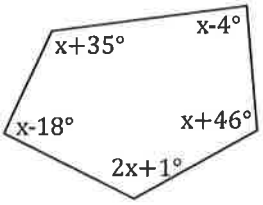
$\boxed{x = 140°}$

Bubble all the correct answers from above. Don't bubble incorrect answers.

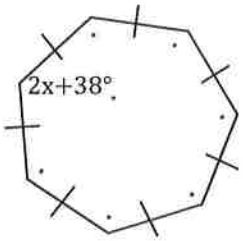
○ 324.59 ○ 84 ○ 44.3 ○ 143 ○ 128.5 ○ 119 ○ 168 ○ 140 ○ 83 ○ 31

For these... solve for x.

31.



32.



$n = 7$

$S = 180(n-2)$

$S = 180(7-2)$

$S = 900$

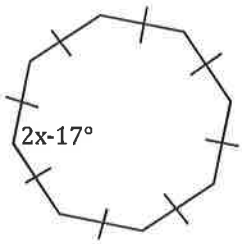
$7(2x+38) = 900$

$2x + 38 = 128.57$

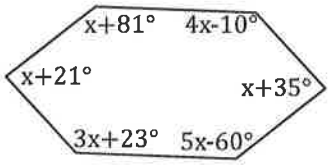
$2x = 90.57$

$\boxed{x = 45.3}$

33.



34.



$n=6$

$(n-2)180°$

$(6-2)180$

$4*180$

$720°$

$x+81+4x-10+x+35+5x-60+3x+23+x+21=720°$

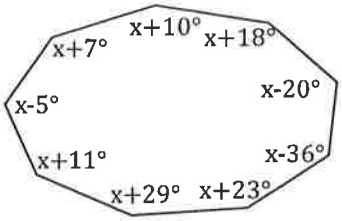
$15x+90=720°$

$-90 \quad -90°$

$\frac{15x}{15} = \frac{630°}{15}$

$x=42°$

35.



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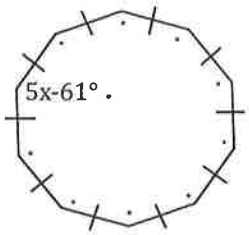


$n = 10$

$S = 180(n-2)$

$S = 180(10-2)$

$S = 1440$

$10(5x-61) = 1440$

$5x - 61 = 144$

$5x = 205$

$\boxed{x = 41}$

Bubble all the correct answers from above. Don't bubble incorrect answers.

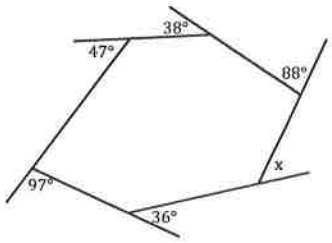
○113 ○45.29 ○47.32 ○41 ○135.89 ○47 ○42 ○76 ○123.5 ○110

Name: _____

Period: _____

Find the missing angle.

17.



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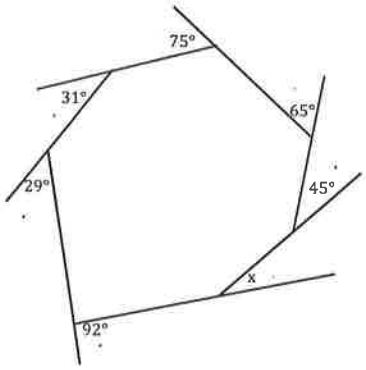
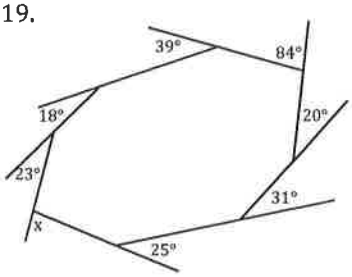


$45 + 65 + 75 + 31 + 29 + 92 + x = 360$

$337 + x = 360$

$\boxed{x = 23°}$

19.



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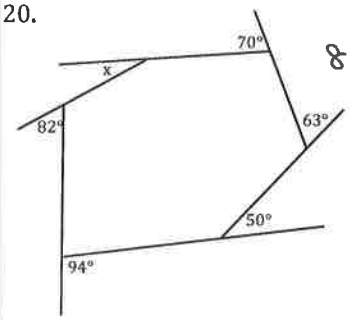
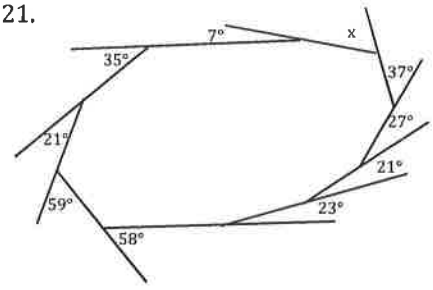


$82 + 94 + 50 + 63 + 70 + x = 360$

$359 + x = 360$

$\boxed{x = 1°}$

21.



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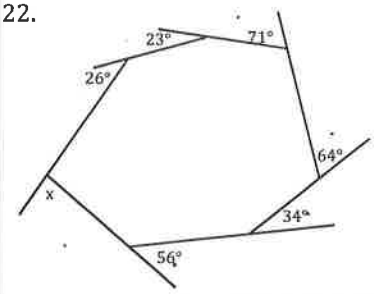


$56 + 34 + 64 + 71 + 23 + 26 + x = 360$

$274 + x = 360$

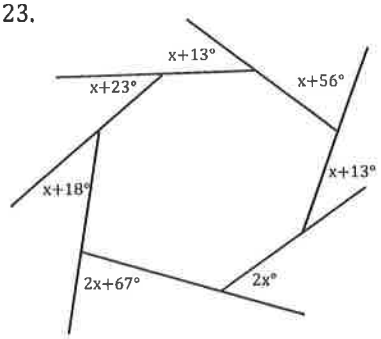
$\boxed{x = 86°}$

Bubble all the correct answers from above. Don't bubble incorrect answers.

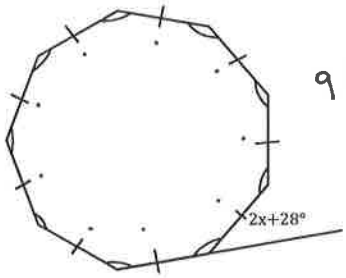
○86 ○89 ○72 ○2 ○1 ○125 ○120 ○26 ○23 ○54

Solve for x.

23.



24.



$n = 9$

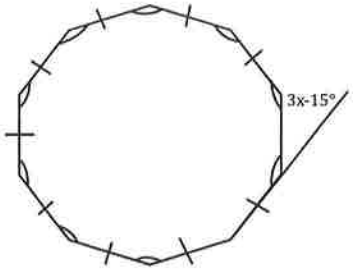
$9(2x+28) = 360$

$2x+28 = 40$

$2x = 12$

$\boxed{x = 6}$

25.



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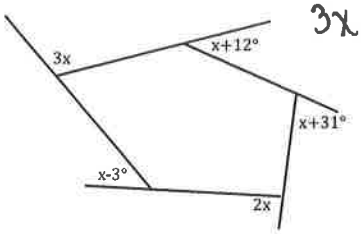


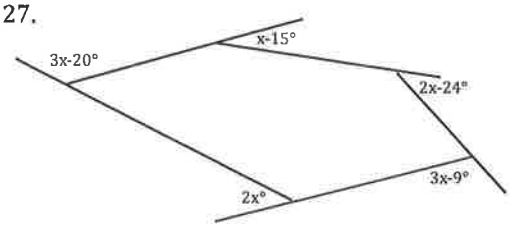
$3x+x-3+2x+x+31+x+12 = 360$

$8x + 40 = 360$

$8x = 320$

$\boxed{x = 40}$

27.



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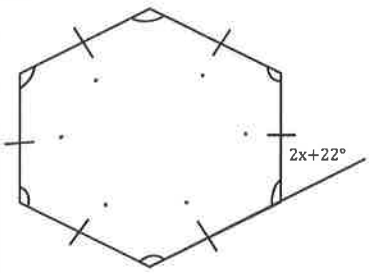

$n = 6$

$6(2x+22) = 360$

$2x+22 = 60$

$2x = 38$

$\boxed{x = 19}$

Bubble all the correct answers from above. Don't bubble incorrect answers.

○9 ○38.91 ○6 ○23.85 ○19 ○17.77 ○18.88 ○17 ○40 ○30