Angles in Polygons

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Examples

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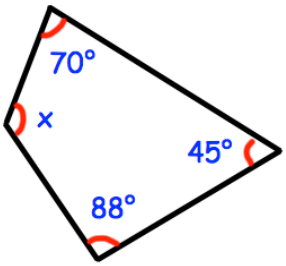
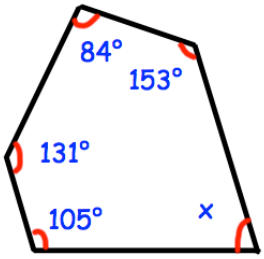
Workout

Question 1: Find the missing angle in each irregular polygon

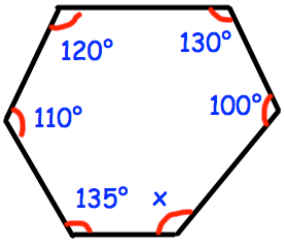
(a)



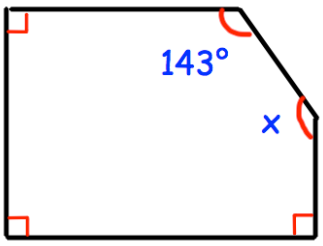
(b)



(c)



(d)



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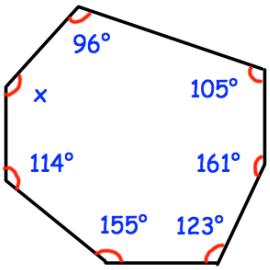
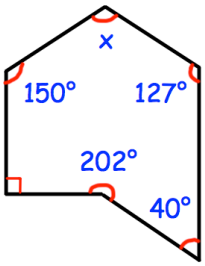
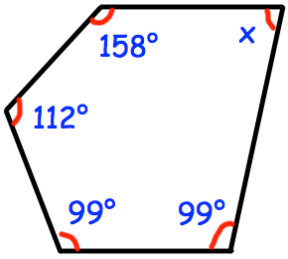


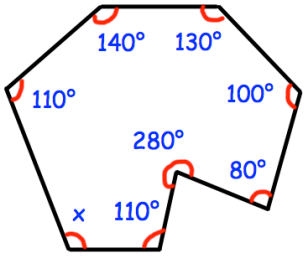
(f)



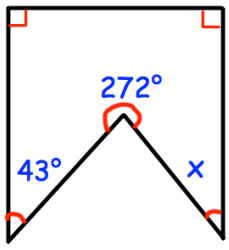
(g)



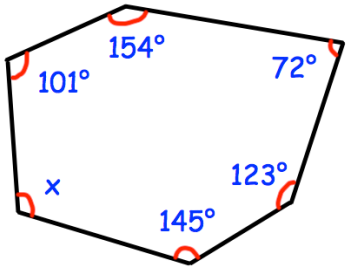
(h)



(i)



(j)



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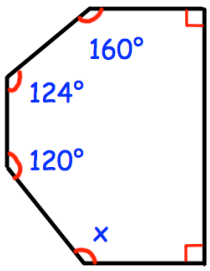
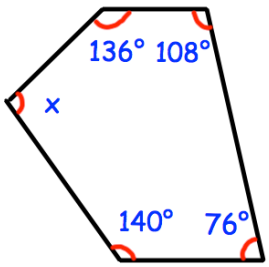


(l)



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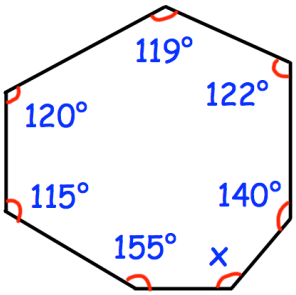
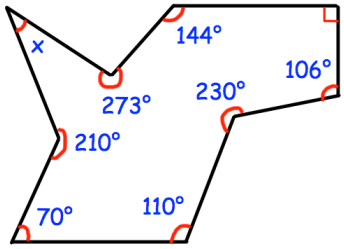
(m)



(n)



Question 2: Work out the sum of the interior angles for polygons with

(a) 10 sides (b) 14 sides (c) 20 sides (d) 45 sides

(e) 50 sides (f) 80 sides (g) 100 sides (h) 200 sides

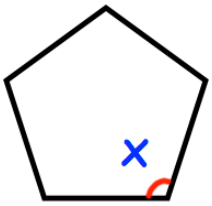
Question 3: Work out the number of sides of polygons with these sum of interior angles

(a) 1260° (b) 2880° (c) 3960° (d) 5040°

(e) 12240° (f) 15840° (g) 2340° (h) 89640°

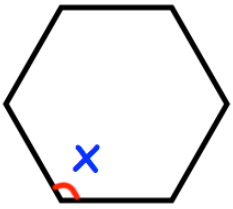
Question 4: Each of the polygons below are regular.
Calculate the size of each interior angle, x.

(a)



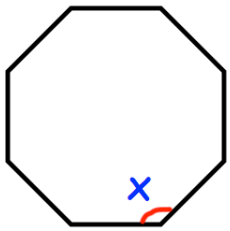
regular pentagon

(b)



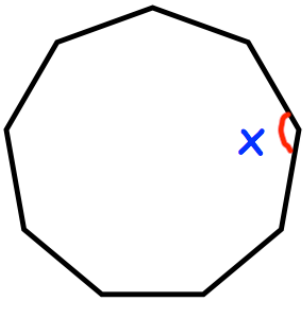
regular hexagon

(c)



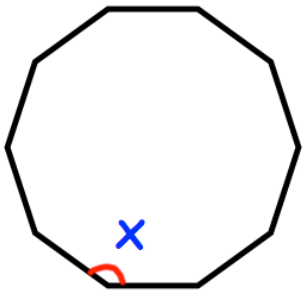
regular octagon

(d)



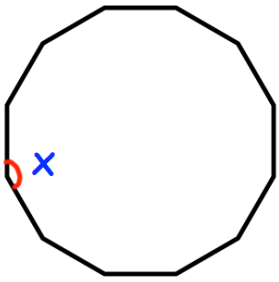
regular nonagon

(e)



regular decagon

(f)



regular dodecagon

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Question 5: Calculate the size of each interior angle in regular polygons with

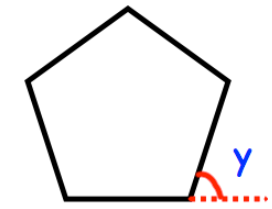
(a) 15 sides (b) 20 sides (c) 24 sides (d) 30 sides

(e) 36 sides (f) 40 sides (g) 50 sides (h) 60 sides

(i) 72 sides (j) 80 sides (k) 90 sides (l) 100 sides

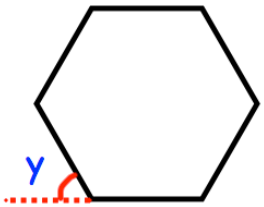
Question 6: Each of the polygons below are regular.
Calculate the size of each exterior angle, y.

(a)



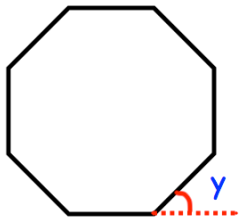
regular pentagon

(b)



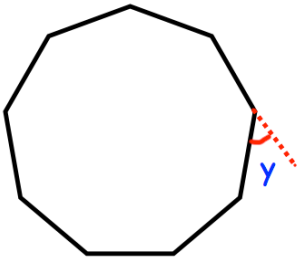
regular hexagon

(c)



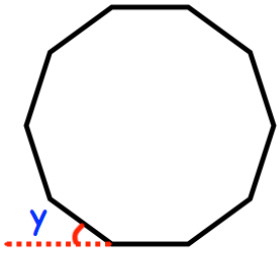
regular octagon

(d)



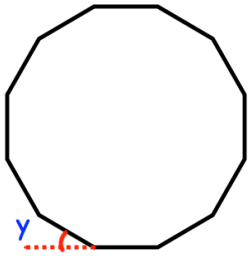
regular nonagon

(e)



regular decagon

(f)



regular dodecagon

Question 7: Calculate the size of each exterior angle in regular polygons with

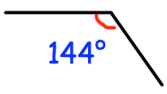
(a) 15 sides (b) 18 sides (c) 20 sides (d) 24 sides

(e) 30 sides (f) 36 sides (g) 40 sides (h) 45 sides

(i) 60 sides (j) 72 sides (k) 90 sides (l) 200 sides

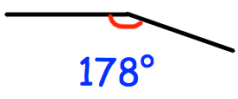
Question 8: Shown below is one interior angle from regular polygons.
Calculate how many sides the polygons have.

(a)



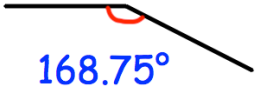
(b)

(c)



(d)

(e)



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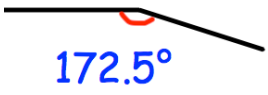

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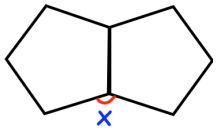
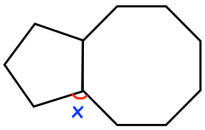
Apply

Question 1: In each diagram below, two regular polygons are shown.
Calculate x.

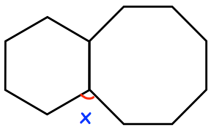
(a)



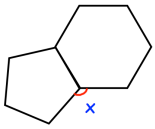
(b)



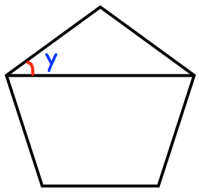
(c)



(d)



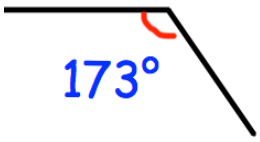
Question 2: Shown is a regular pentagon.
Find y.



Question 3: A regular polygon has 18 sides.
Calculate the size of each interior angle.

Question 4: A regular polygon has 30 sides.
Calculate the size of each interior angle.

Question 5: Explain why this cannot be an interior angle from regular polygons.

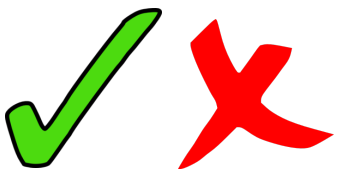


Question 6: A polygon has an interior angle that is five times larger than the exterior angle.
How many sides does it have?

Question 7: Explain why regular hexagons tessellate.

Question 8: Explain why regular pentagons do not tessellate.

Answers



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