Corbett maths

Circle Theorems

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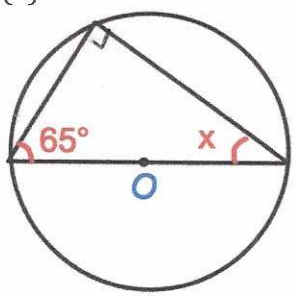
Workout

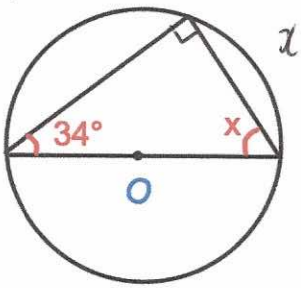
Question 1: Find the missing angles labelled in each of these circles

(a)



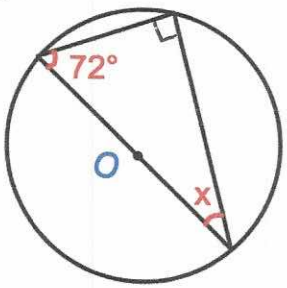
$x = 25°$

(b)



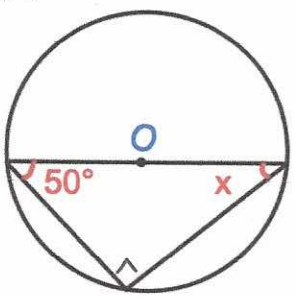
$x = 56°$

(c)



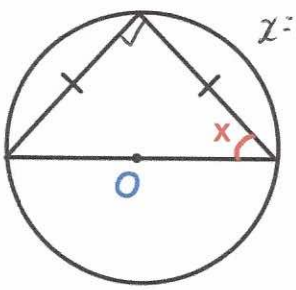
$x = 18°$

(d)



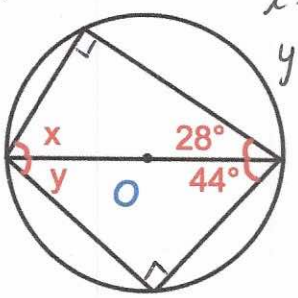
$x = 40°$

(e)



$x = 45°$

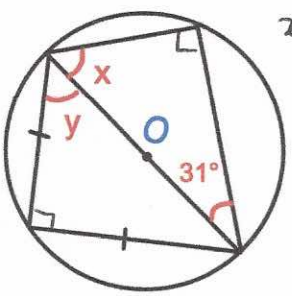
(f)



$x = 62°$

$y = 46°$

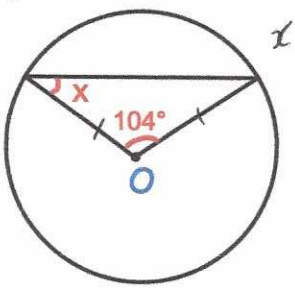
(g)



$x = 59°$

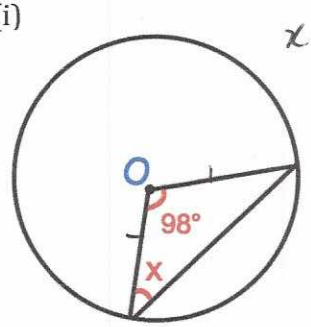
$y = 45°$

(h)



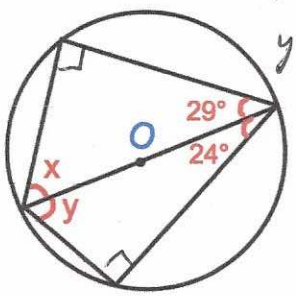
$x = 38°$

(i)



$x = 41°$

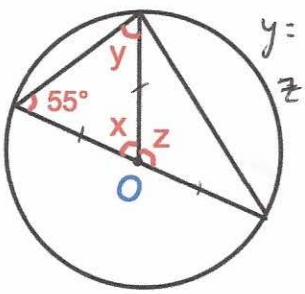
(j)



$x = 61°$

$y = 66°$

(k)

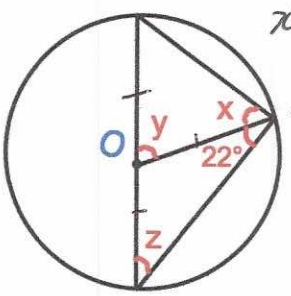


$x = 70°$

$y = 55°$

$z = 110°$

(l)



$x = 18°$

$y = 44°$

$z = 22°$

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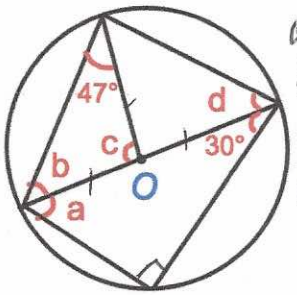
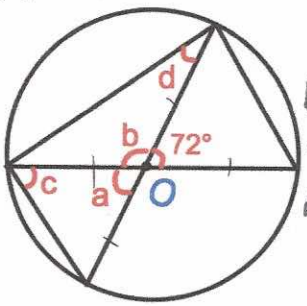
(m)



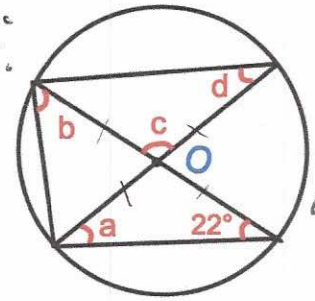
$a = 60°$
$b = 47°$
$c = 86°$
$d = 43°$

(n)



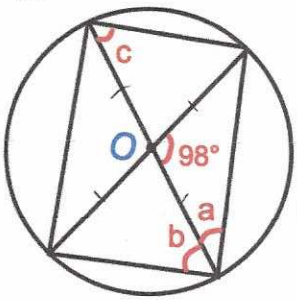
$a = 72°$
$b = 108°$
$c = 54°$
$d = 36°$

(o)



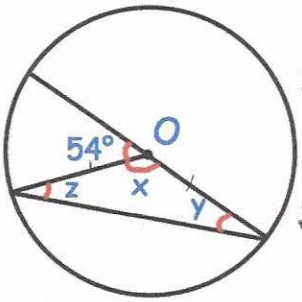
$a = 22°$
$b = 68°$
$c = 136°$
$d = 22°$

(p)



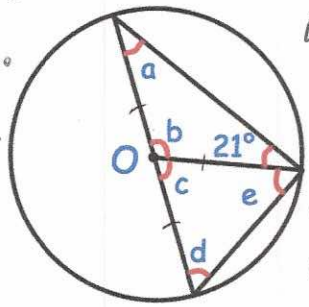
$a = 41°$
$b = 49°$
$c = 49°$

(q)



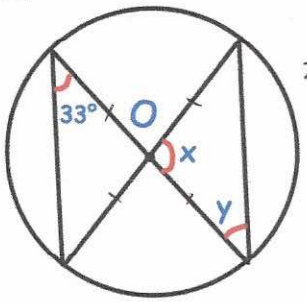
$x = 126°$
$y = 27°$
$z = 27°$

(r)



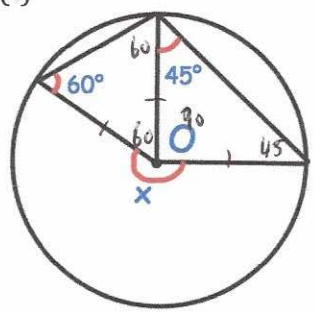
$a = 21°$
$b = 138°$
$c = 42°$
$d = 69°$
$e = 69°$

(s)



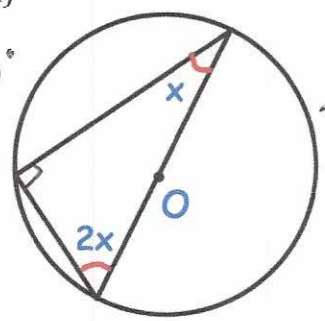
$x = 114°$
$y = 33°$

(t)



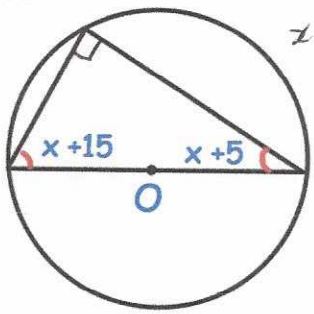
$x = 210°$

(u)



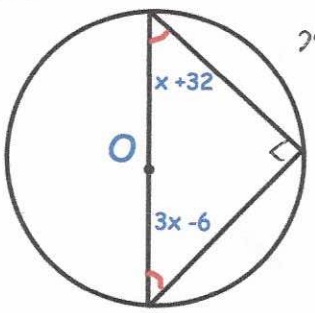
$x = 30°$

(v)



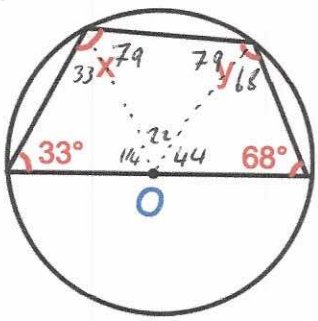
$x = 35°$

(w)



$x = 16°$

(x)



$x = 112°$
$y = 147°$

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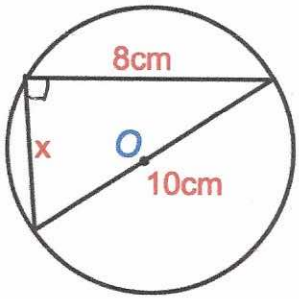
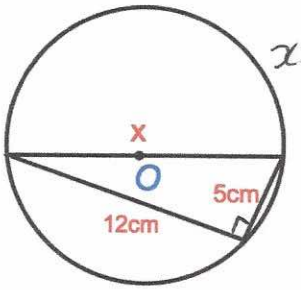
Question 2: Calculate the length of sides labelled in the circles below

(a)



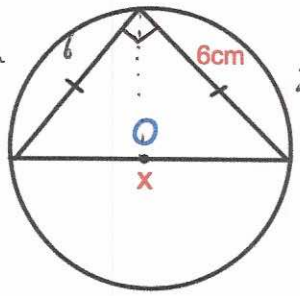
$x = 6$ cm

(b)



$x = 13$ cm

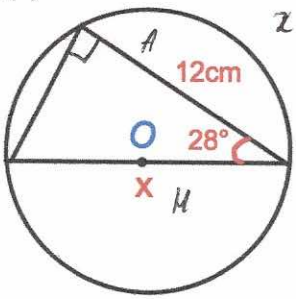
(c)



$x = 8.485$ cm

Question 3: Calculate the length of sides labelled in the circles below

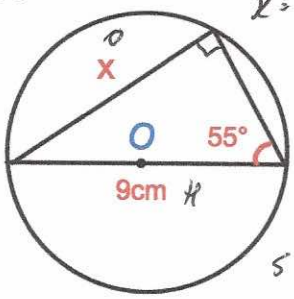
(a)



$x = 13.59$ cm

C A H

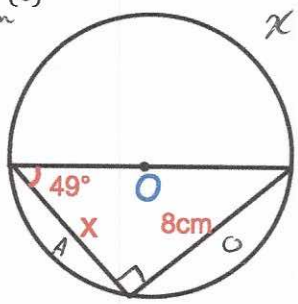
(b)



$x = 7.37$ cm

S O H

(c)

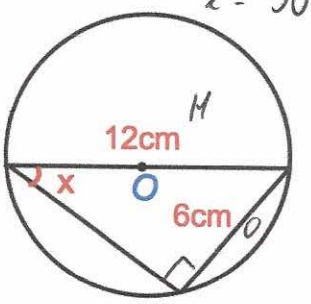


$x = 6.95$ cm

T O A

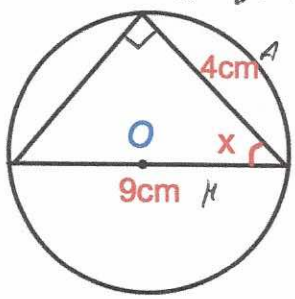
Question 4: Calculate the size of the missing angles

(a)



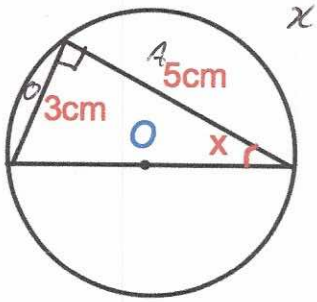
$x = 30°$

(b)



$x = 63.6°$

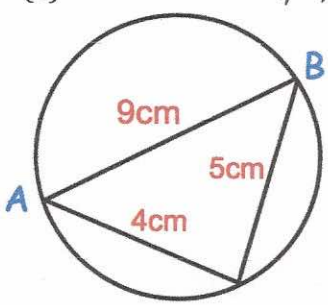
(c)



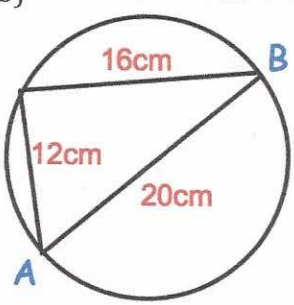
$x = 30.96°$

Question 5: State, with a reason, if AB is the diameter in each circle below.

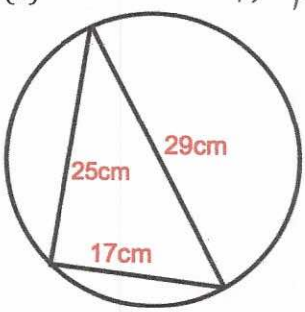
(a) No $4^2 + 5^2 \neq 9^2$



(b) Yes $12^2 + 16^2 = 20^2$



(c) No $17^2 + 25^2 \neq 29^2$



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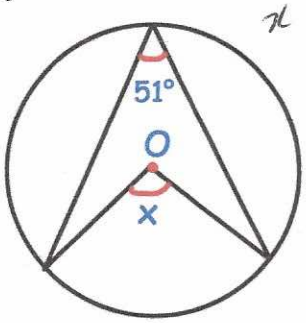
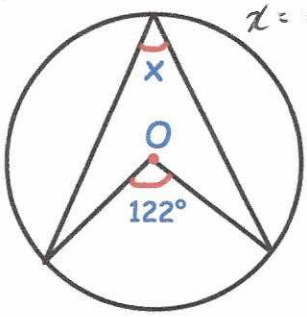
Question 6: Find the missing angles labelled in each of these circles

(a)



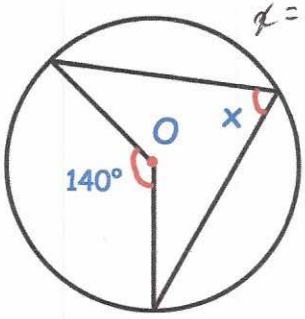
$x = 102°$

(b)



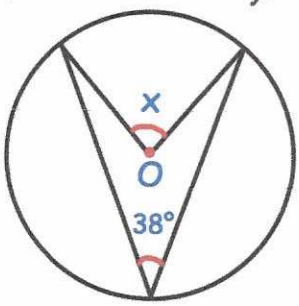
$x = 61°$

(c)



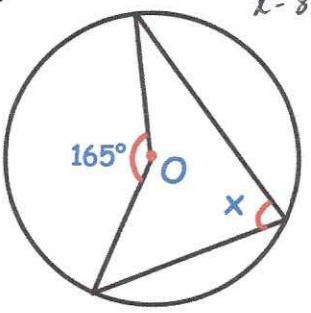
$x = 70°$

(d)



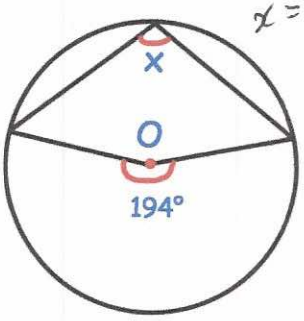
$x = 76°$

(e)



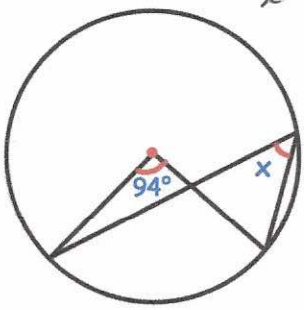
$x = 82.5°$

(f)



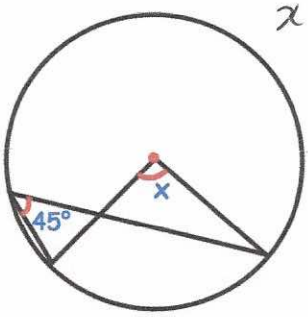
$x = 97°$

(g)



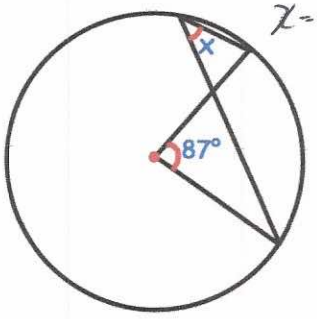
$x = 47°$

(h)



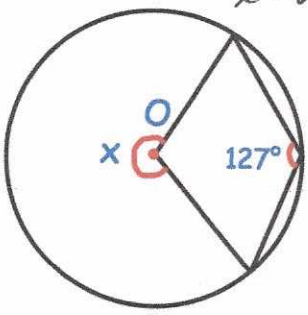
$x = 90°$

(i)



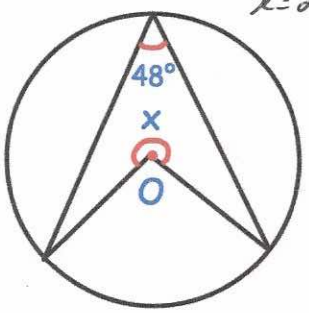
$x = 43.5°$

(j)



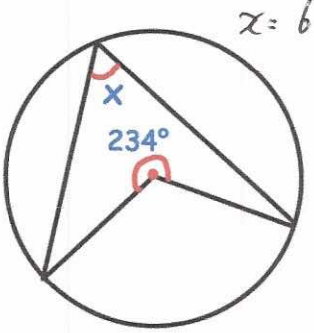
$x = 254°$

(k)



$x = 264°$

(l)



$x = 63°$

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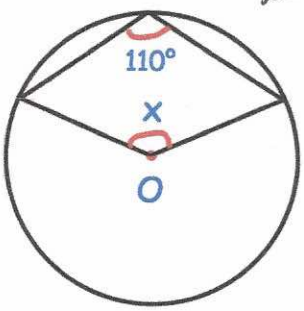
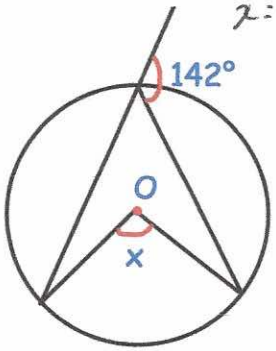
(m)



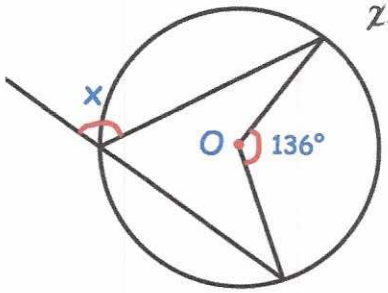
$x = 140°$

(n)



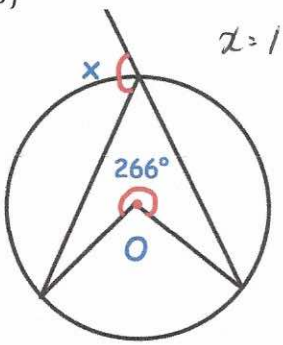
$x = 76°$

(o)



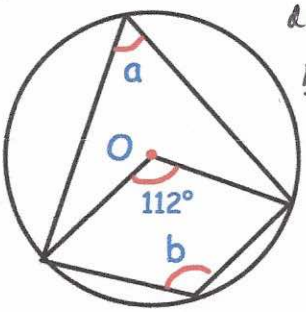
$x = 112°$

(p)



$x = 133°$

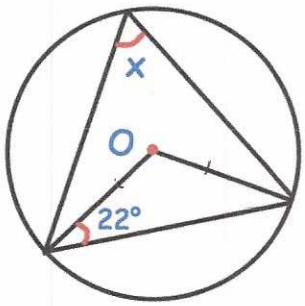
(q)



$a = 56°$

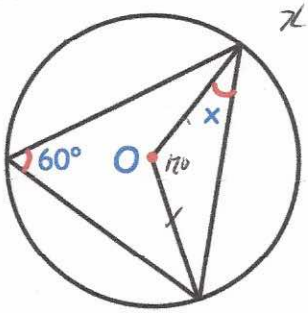
$b = 124°$

(r)



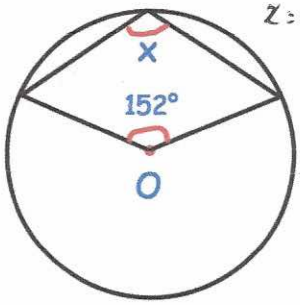
$x = 68°$

(s)



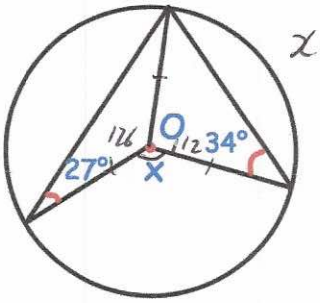
$x = 30°$

(t)



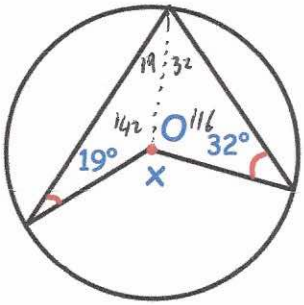
$x = 104°$

(u)



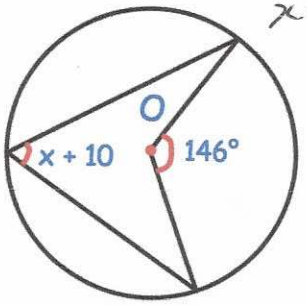
$x = 122°$

(v)



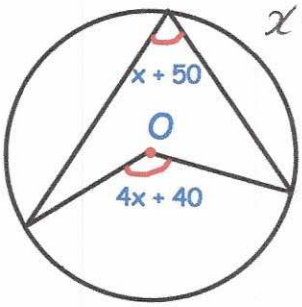
$x = 107°$

(w)



$x = 63°$

(x)



$x = 30°$

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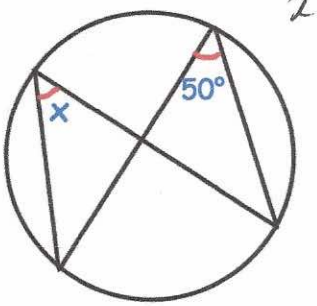
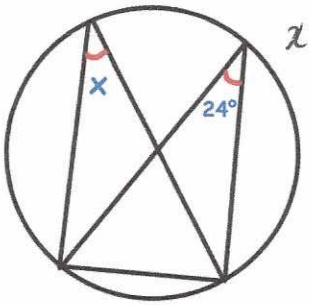
Question 7: Find the missing angles labelled in each of these circles

(a)



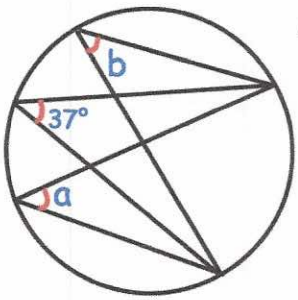
$x = 50°$

(b)



$x = 24°$

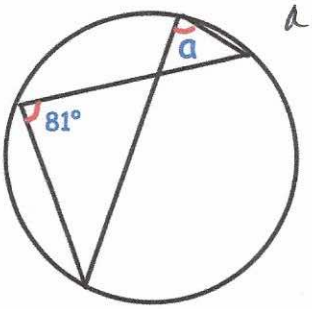
(c)



$a = 37°$

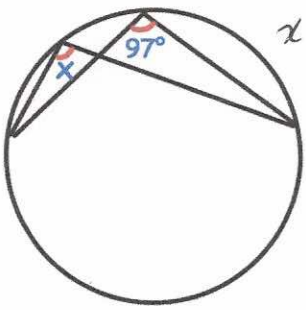
$b = 37°$

(d)



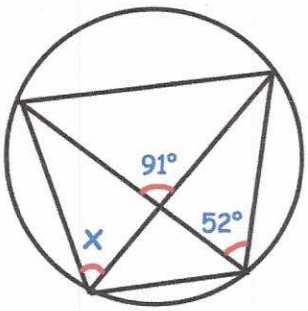
$a = 81°$

(e)



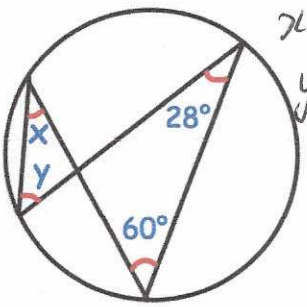
$x = 97°$

(f)



$x = 52°$

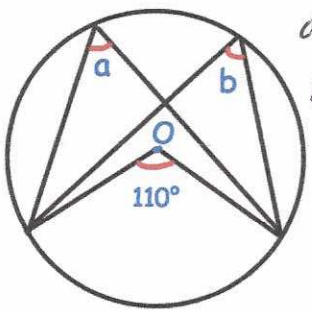
(g)



$x = 28°$

$y = 60°$

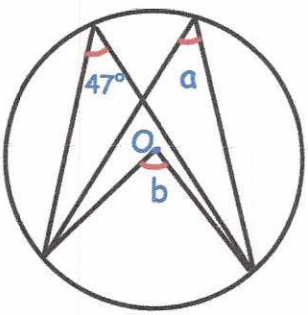
(h)



$a = 55°$

$b = 55°$

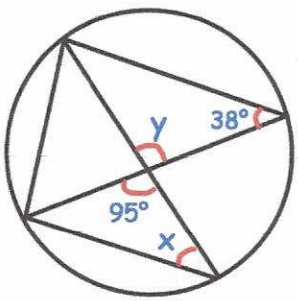
(i)



$a = 47°$

$b = 94°$

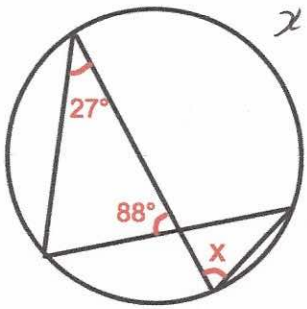
(j)



$x = 38°$

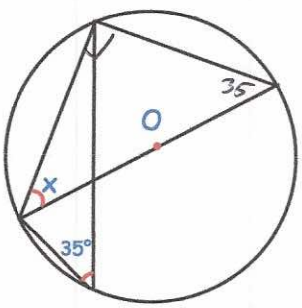
$y = 95°$

(k)



$x = 65°$

(l)



$x = 55°$

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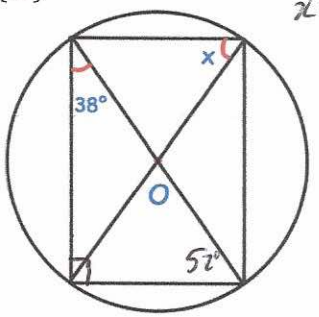
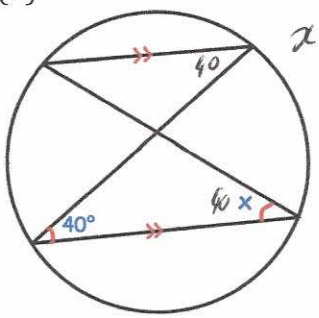
(m)



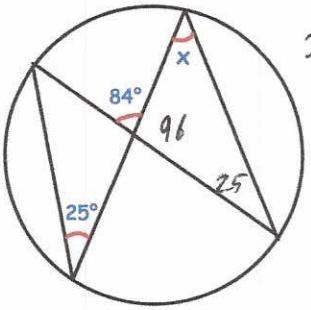
$x = 52°$

(n)



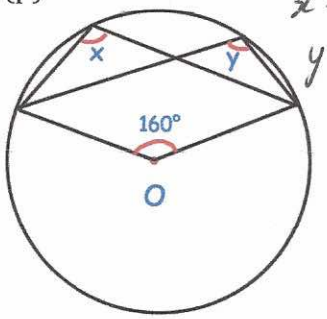
$x = 40°$

(o)



$x = 59°$

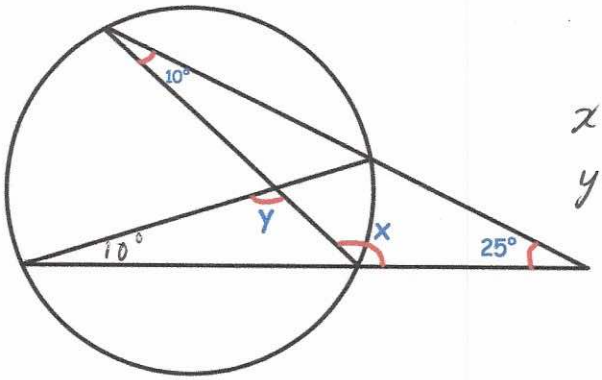
(p)



$x = 100°$

$y = 100°$

(q)

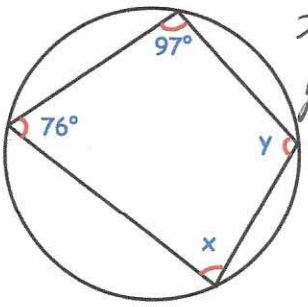


$x = 145°$

$y = 135°$

Question 8: Find the missing angles labelled in each of these circles

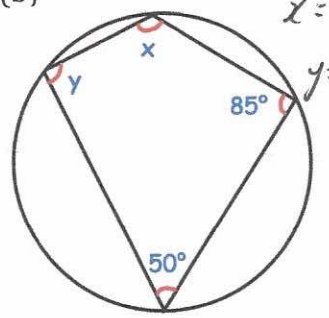
(a)



$x = 83°$

$y = 104°$

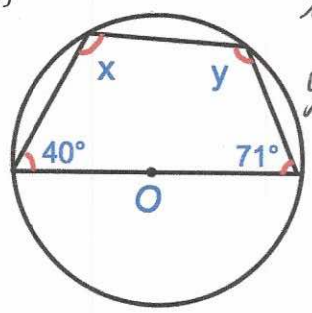
(b)



$x = 130°$

$y = 95°$

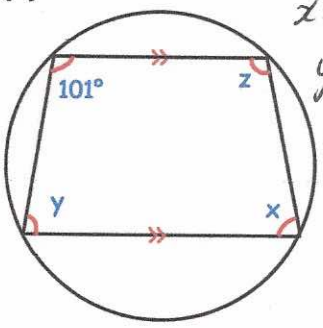
(c)



$x = 109°$

$y = 140°$

(d)

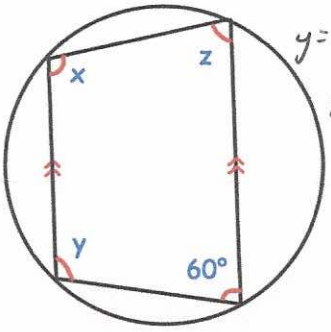


$x = 79°$

$y = 79°$

$z = 101°$

(e)

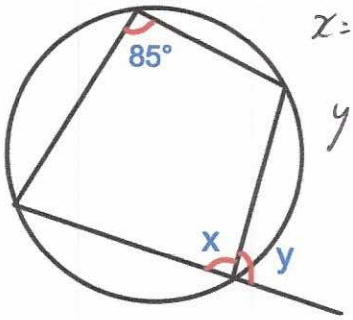


$x = 120°$

$y = 120°$

$z = 60°$

(f)



$x = 95°$

$y = 85°$

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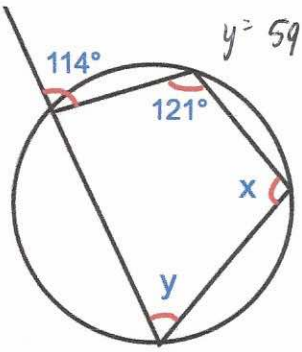
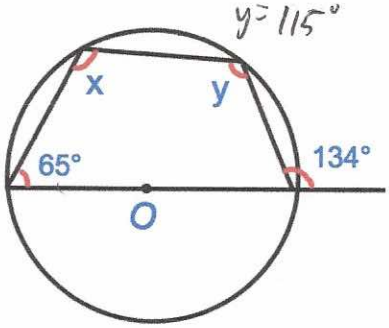
(g)



$x = 114°$

$y = 59$

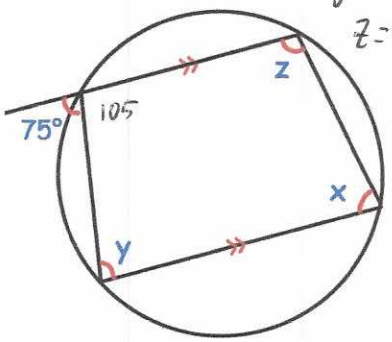
(h)



$x = 134°$

$y = 115°$

(i)

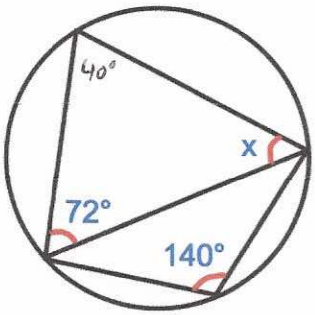


$x = 75°$

$y = 75°$

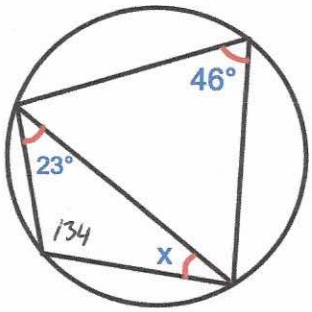
$z = 105°$

(j)



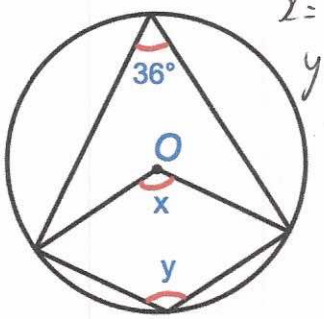
$x = 68°$

(k)



$x = 23°$

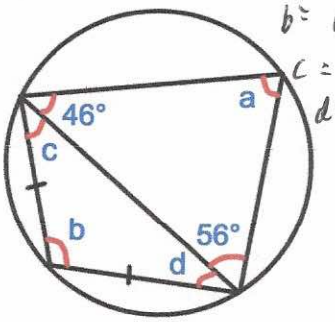
(l)



$x = 72°$

$y = 144°$

(m)



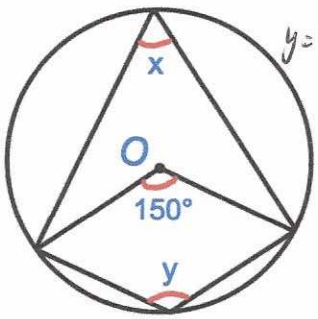
$a = 78°$

$b = 102°$

$c = 39°$

$d = 39°$

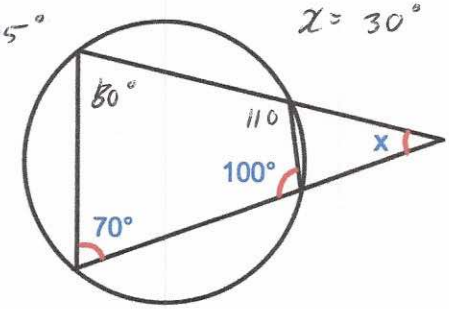
(n)



$x = 75°$

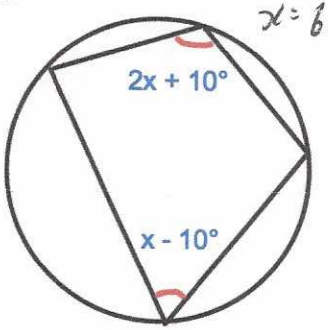
$y = 105°$

(o)



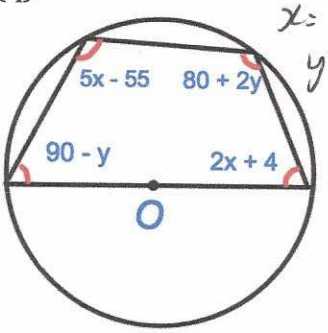
$x = 30°$

(p)



$x = 60°$

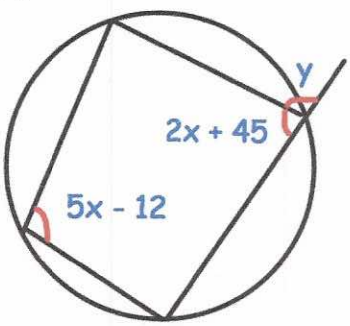
(q)



$x = 33°$

$y = 10°$

(r)



$x = 21°$

$y = 93°$

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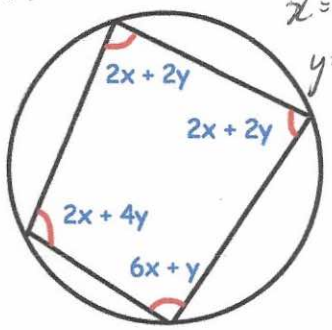
Question 9: Find the values of x and y

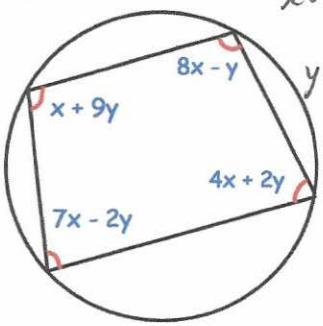
(a)



$x = 15°$

$y = 20°$

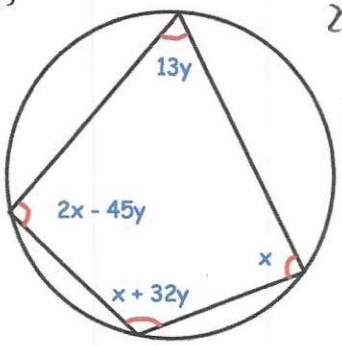
(b)



$x = 14°$

$y = 10°$

(c)

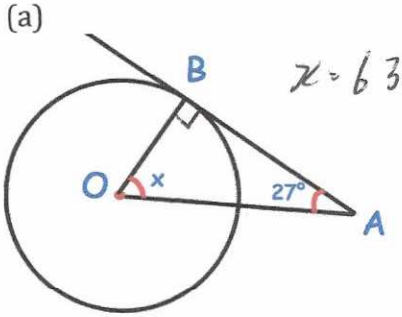


$x = 90°$

$y = 2°$

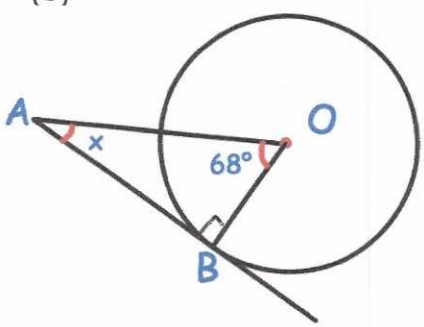
Question 10: Find the value of x in each diagram. The lines AB and AC are tangents.

(a)



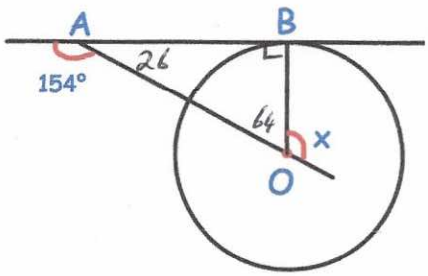
$x = 63°$

(b)



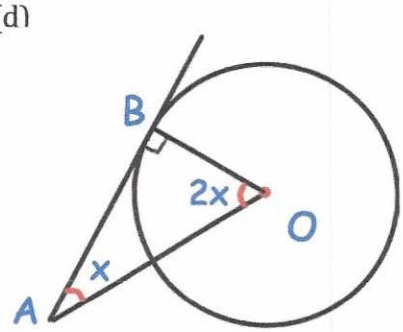
$x = 22°$

(c)



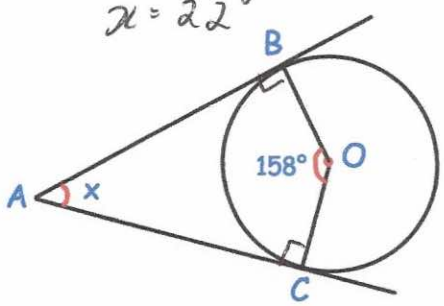
$x = 116°$

(d)



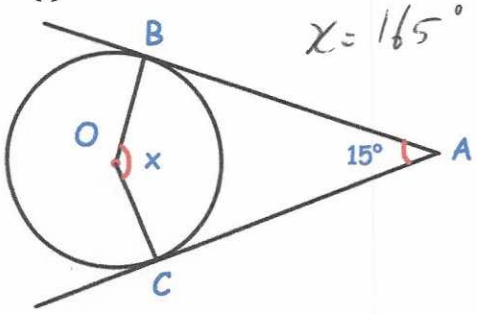
$x = 30°$

(e)



$x = 22°$

(f)



$x = 165°$

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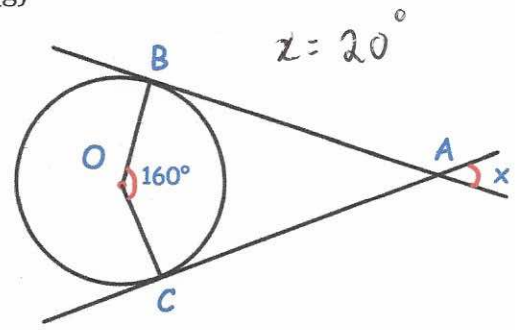
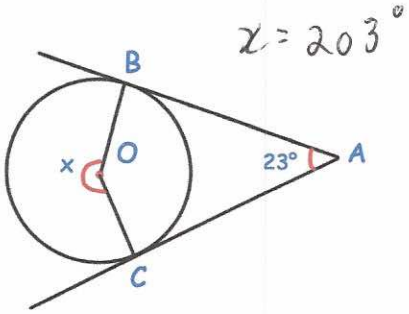
(g)

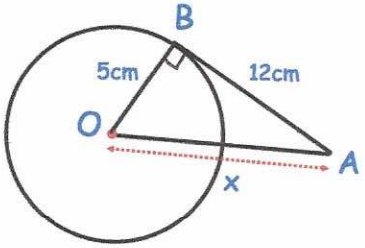


(h)

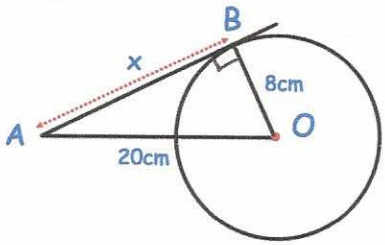


Question 11: Calculate the length of sides labelled in the circles below. The lines AB and AC are tangents.

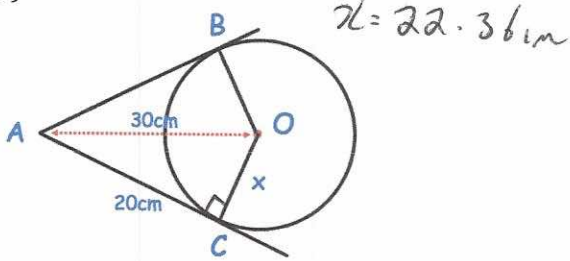
(a)



(b)

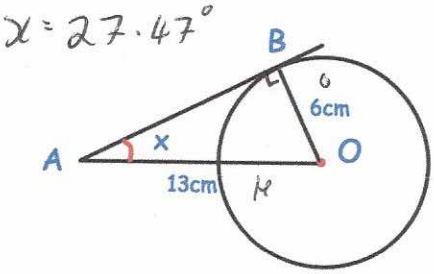


(c)

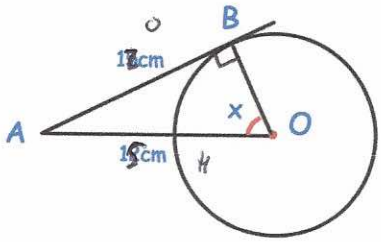


Question 12: Calculate the size of x in the circles below. The lines AB and AC are tangents.

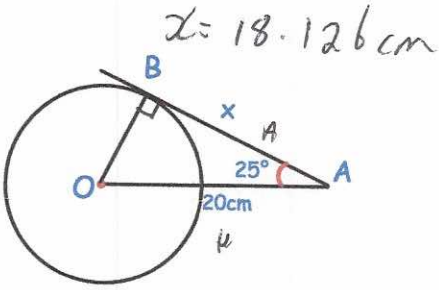
(a)



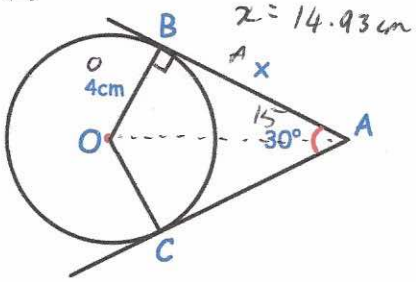
(b)



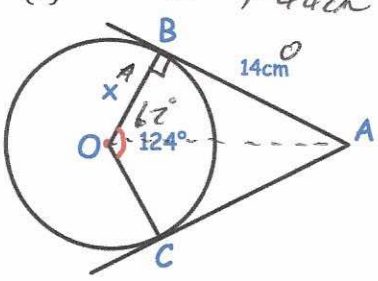
(c)



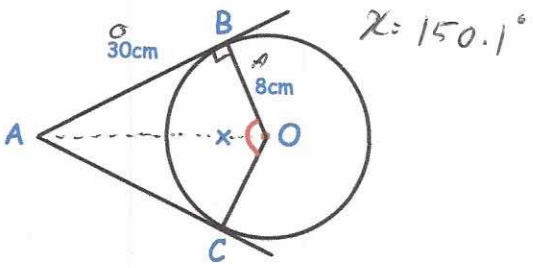
(d)



(e)



(f)



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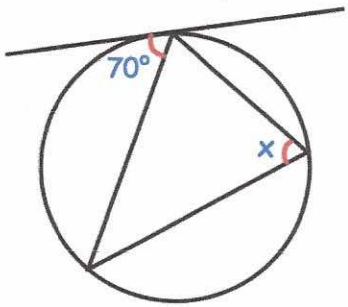
Corbett maths

Circle Theorems

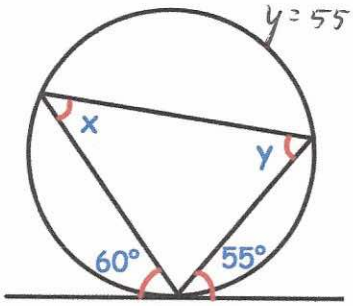
Videos 64/65 on Corbettmaths

Question 13: Find the missing angles labelled in each of these circles

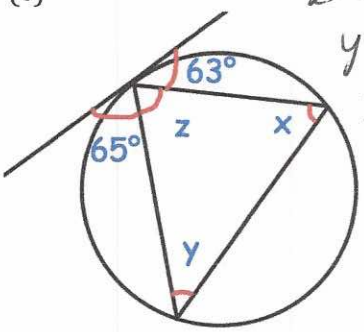
(a) $x = 70°$



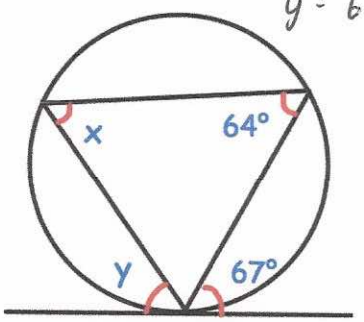
(b) $x = 60°$ $y = 55°$



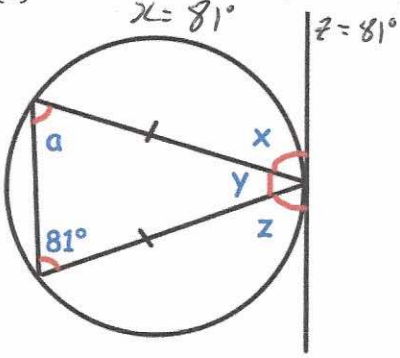
(c) $x = 65°$ $y = 63°$ $z = 52°$



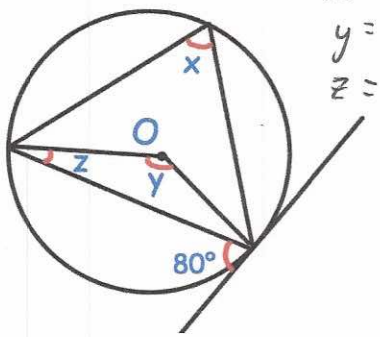
(d) $x = 67°$ $y = 64°$



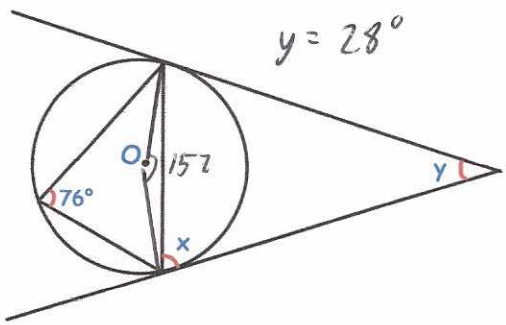
(e) $a = 81°$ $y = 18°$ $x = 81°$ $z = 81°$



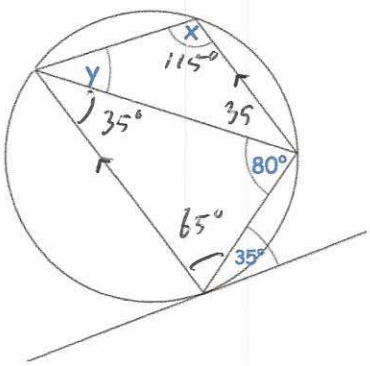
(f) $x = 80°$ $y = 160°$ $z = 10°$



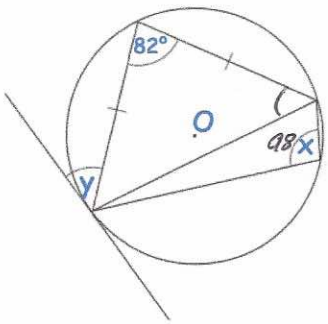
(g) $x = 76°$ $y = 28°$



(h) $x = 115°$ $y = 30°$



(i) $x = 98°$ $y = 49°$



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