Geometry

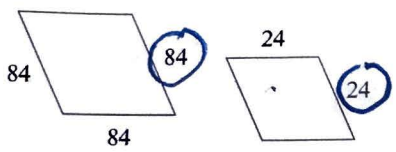
Name * Answers ID: 1

Simiar Figures

Date _____ Period ____

The polygons in each pair are similar. Find the scale factor of the smaller figure to the larger figure.

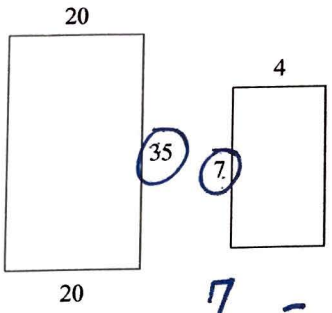
1)



2 : 7

.28 $\frac{84}{84} = \frac{2}{7} = 2:7$ ratio

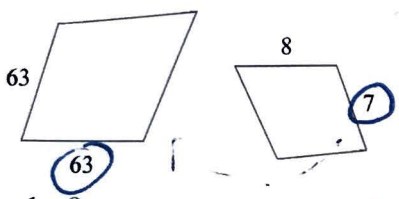
2)



1 : 5

$\frac{7}{35} = \frac{1}{5} \rightarrow 1:5$

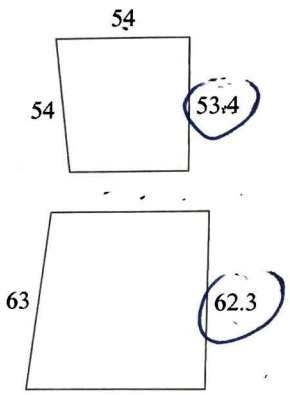
3)



1 : 9

$\frac{7}{63} = \frac{1}{9}$ 1:9

4)

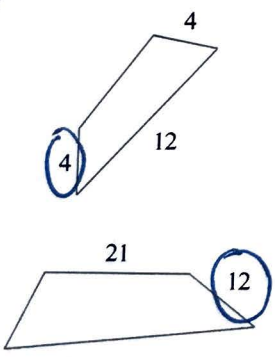


6 : 7

$\frac{53.4}{62.3} = \frac{6}{7}$

6:7

5)



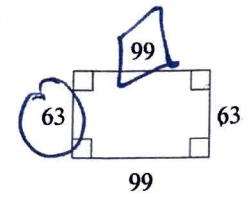
1 : 3

$\frac{4}{12} = \frac{1}{3} \rightarrow 1:3$

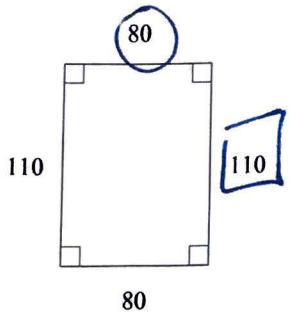
14

State if the polygons are similar.

6)



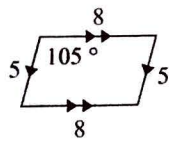
$\frac{63}{80} = .7875$

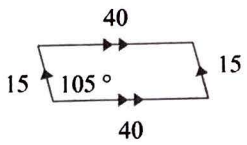


$\frac{99}{110} = .9$

not similar

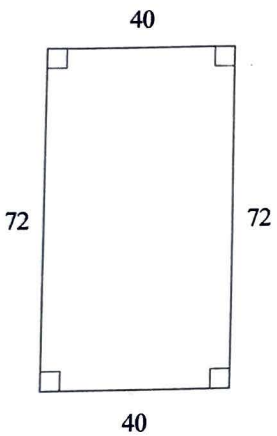
7)

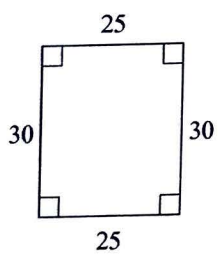




not similar

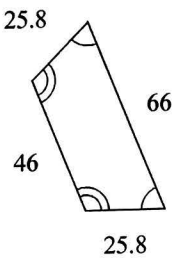
8)

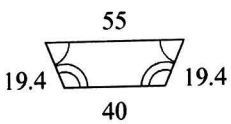




not similar

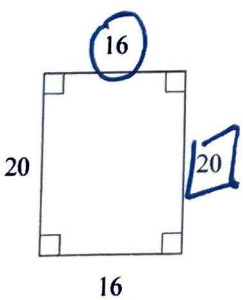
9)



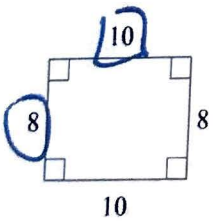


not similar

10)



$\frac{16}{8} = 2$



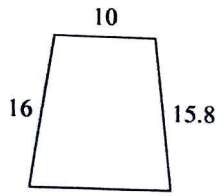
$\frac{20}{10} = 2$

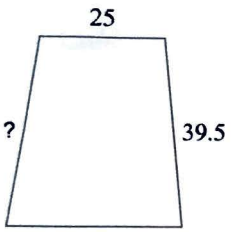
similar

15

The polygons in each pair are similar. Find the missing side length.

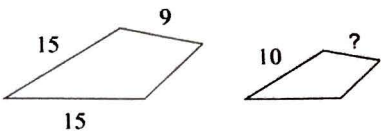
11)





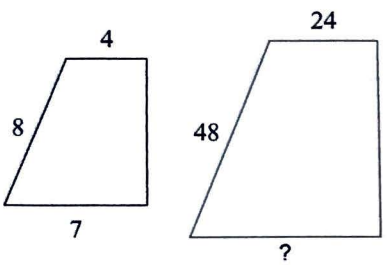
40

12)



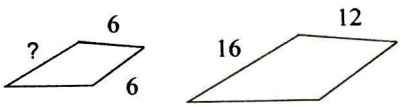
6

13)



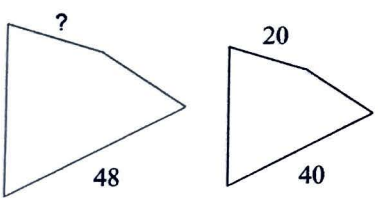
42

14)



8

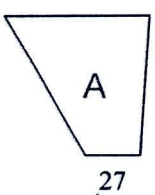
15)



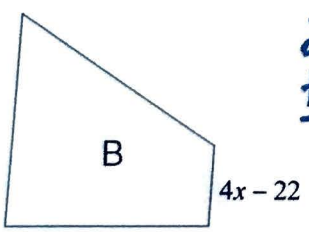
24

Solve for *x*. The polygons in each pair are similar.

16)



$\frac{27}{4x-22} = \frac{9}{10}$



$270 = 36x - 198$

$+198 \quad +198$

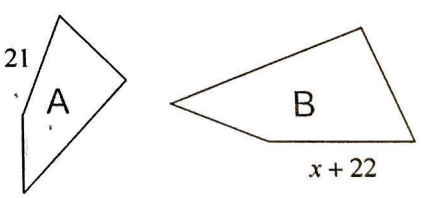
$\frac{468}{36} = \frac{36x}{36}$

$x = 13$

scale factor from A to B = 9 : 10

13

17)



scale factor from A to B = 3 : 5

13

$\frac{21}{x+22} = \frac{3}{5}$

$x = 13$

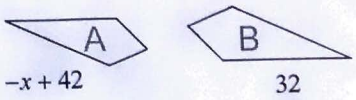
$105 = 3x + 66$

$-66 \quad -66$

$\frac{39}{3} = \frac{3x}{3}$

16

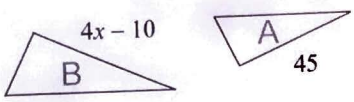
18)



scale factor from A to B = 3 : 4

18

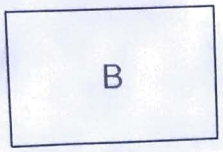
19)

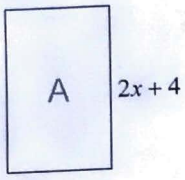


scale factor from A to B = 5 : 6

16

20)





scale factor from A to B = 4 : 5

20

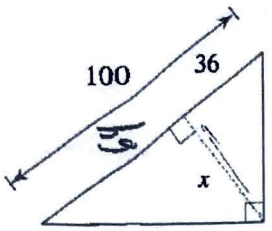
17

Similar Right Triangles

Date_____ Period____

Find the missing length indicated. Leave your answer in simplest radical form.

1)

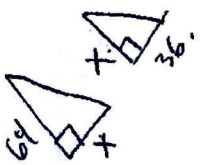


48

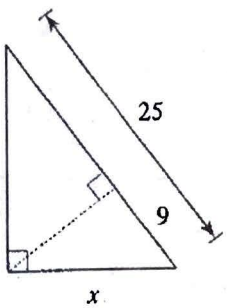
$\frac{64}{x} = \frac{x}{36}$

$x^2 = 2304$

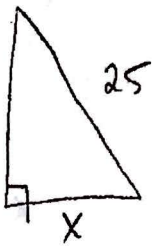
$x = 48$

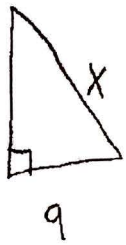


2)



15



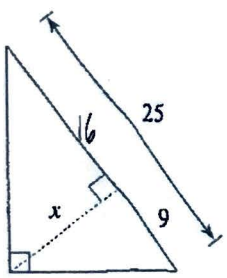


4 25 x 9 225

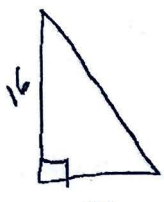
$x^2 = 225$

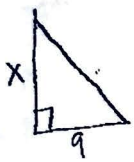
$x = 15$

3)



12



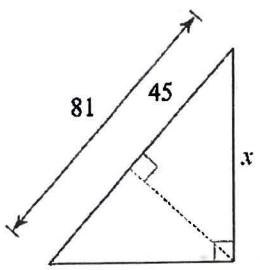


$\frac{16}{x} = \frac{x}{9}$

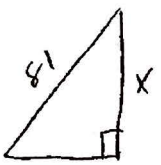
$x^2 = 144$

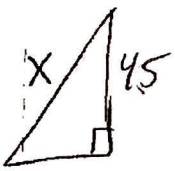
$x = 12$

4)



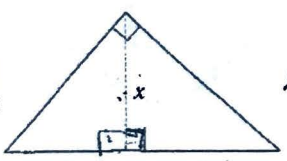
$27\sqrt{5}$



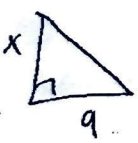


$\frac{81}{x} = \frac{x}{45}$

5)

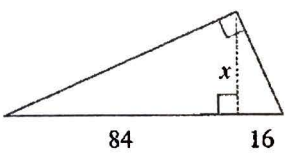


$3\sqrt{7}$

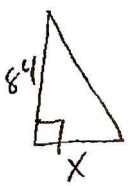


$\frac{x}{9} = \frac{7}{x}$

6)

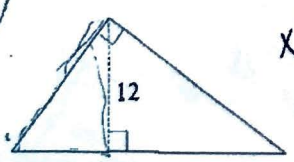


$8\sqrt{21}$

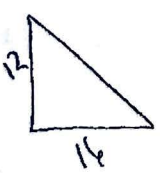


$\frac{x}{16} = \frac{84}{x}$

7)



9

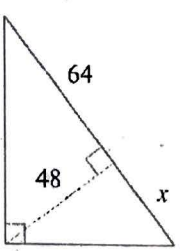


$\frac{x}{12} = \frac{12}{16}$

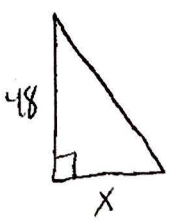
$\frac{16x}{16} = \frac{144}{16}$

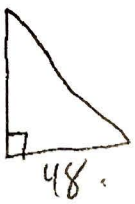
$x = 9$

8)



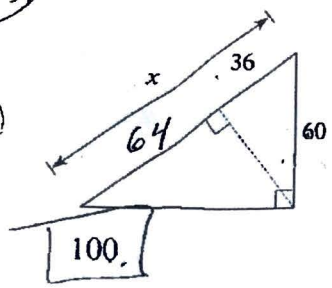
36



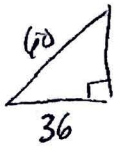


$\frac{48}{x} = \frac{64}{48}$

9)

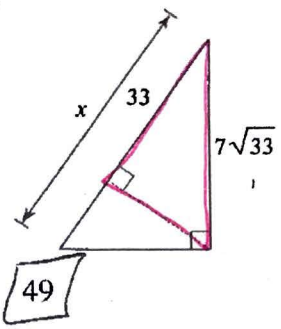


100

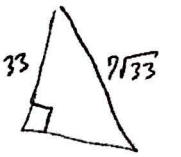


$\frac{60}{36} = \frac{X}{60}$

10)



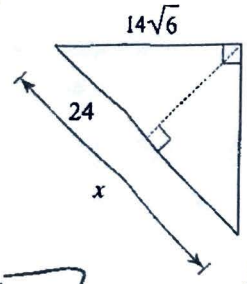
49



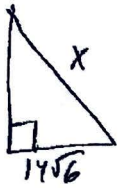
$\frac{33}{7\sqrt{33}} = \frac{7\sqrt{33}}{X}$

$33X = 49 \cdot 33$

11)



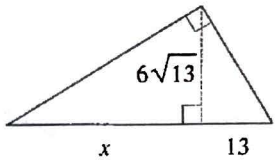
49



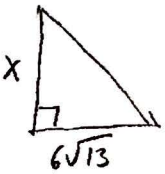
$\frac{X}{14\sqrt{6}} = \frac{14\sqrt{6}}{24}$

$24X = 196 \cdot 6$

12)

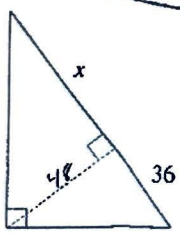


36

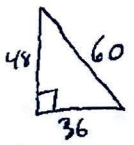


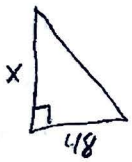
$\frac{6\sqrt{13}}{13} = \frac{X}{6\sqrt{13}}$ $13X = 36 \cdot 13$

13)



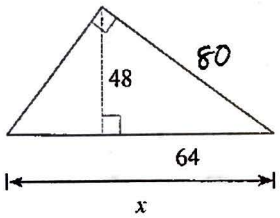
64



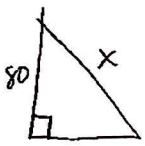


$\frac{48}{36} = \frac{X}{48}$

14)

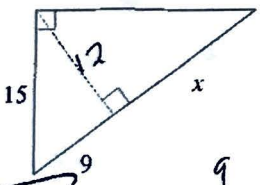


100

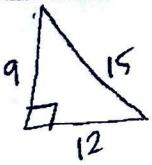


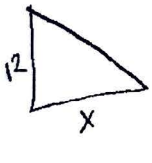
$\frac{80}{64} = \frac{X}{80}$

15)



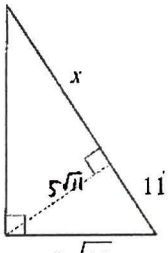
16





$\frac{9}{12} = \frac{12}{X}$

16)

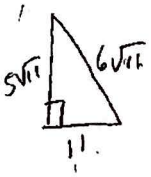


25

$11^2 + b^2 = (6\sqrt{11})^2$

$121 + b^2 = 396$

$\sqrt{275} = 5\sqrt{11}$

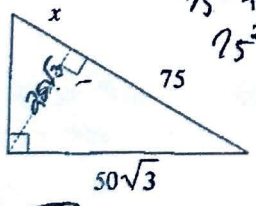


$\frac{5\sqrt{11}}{11} = \frac{X}{5\sqrt{11}}$

$11X = 25 \cdot 11$

$X = 25$

17)



25

$75^2 + b^2 = 50\sqrt{3}$

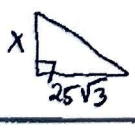
$75^2 + b^2 = 7500$

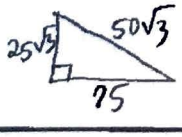
$b^2 = 1875$

$25 \cdot 25 \cdot 3$

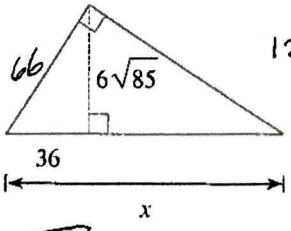
$\frac{X}{25\sqrt{3}} = \frac{25\sqrt{3}}{75}$

$75X = 1875$





18)



121

$36^2 + (6\sqrt{85})^2 = c^2$

$1296 + 3060 = c^2$

$4356 = c^2$

$\frac{66}{X} = \frac{36}{66}$

$36X = 4356$

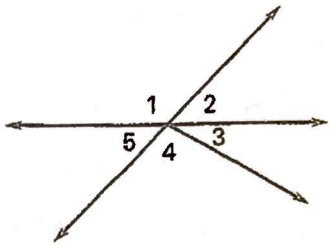
1.6

NAME ws 1.6 key DATE

Practice B

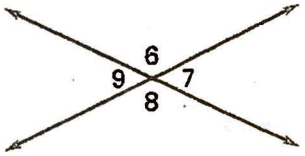
For use with pages 44–50

Use the figure at the right.



1. Are $\angle 1$ and $\angle 2$ a linear pair? Yes
2. Are $\angle 4$ and $\angle 5$ a linear pair? No
3. Are $\angle 3$ and $\angle 1$ vertical angles? No
4. Are $\angle 2$ and $\angle 5$ vertical angles? Yes

Use the figure at the right.

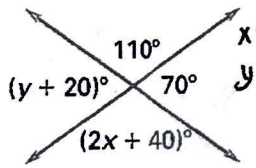


5. If $m\angle 6 = 51°$, then $m\angle 7 =$? . 129°
6. If $m\angle 8 = 103°$, then $m\angle 6 =$? . 103°
7. If $m\angle 9 = 136°$, then $m\angle 8 =$? . ~~53°~~ 44°
8. If $m\angle 7 = 53°$, then $m\angle 9 =$? . 53°

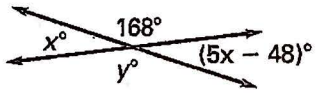
In Exercises 9–12, assume $\angle A$ and $\angle B$ are complementary and $\angle B$ and $\angle C$ are supplementary.

9. If $m\angle A = 48°$, then $m\angle B =$? and $m\angle C =$? . 42°, 138°
10. If $m\angle B = 83°$, then $m\angle A =$? and $m\angle C =$? . 7°, 97°
11. If $m\angle C = 127°$, then $m\angle B =$? and $m\angle A =$? . 53°, 37°
12. If $m\angle A = 45°$, then $m\angle B =$? and $m\angle C =$? . 45°, 135°

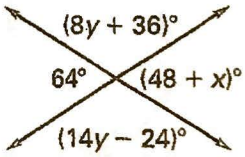
Find the value(s) of the variable(s).

13. 

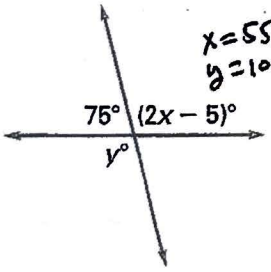
x = 35, y = 50

14. 

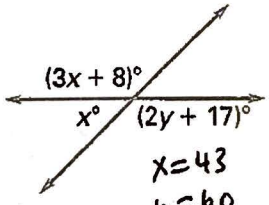
x = 12, y = 168

15. 

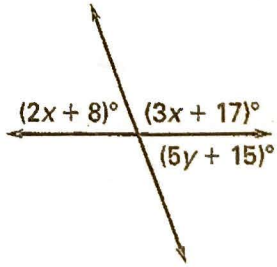
x = 16, y = 10

16. 

x = 55, y = 105

17. 

x = 43, y = 60

18. 

x = 31, y = 11

In Exercises 19 and 20, assume that $\angle A$ is supplementary to $\angle B$ and complementary to $\angle C$. Determine $m\angle A$, $m\angle B$, and $m\angle C$.

19. $m\angle A = x°, m\angle B = (x + 40)°, m\angle C = (x - 50)°$ $m\angle A = 70$ $m\angle B = 110$ $\angle C = 20°$
20. $m\angle A = x°, m\angle B = (2x)°, m\angle C = (x - 30)°$ $m\angle A = 60$ $m\angle B = 120$ $m\angle C = 30°$

20

Lesson 1.6

LESSON 3.3

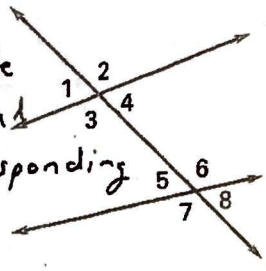
NAME WS 71 Key DATE

Practice A

For use with pages 143–149

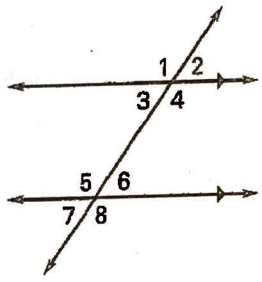
Name the relationship between the pair of angles.

1. $\angle 1$ and $\angle 5$ Corresponding
2. $\angle 2$ and $\angle 7$ alternate ext.
3. $\angle 3$ and $\angle 6$ alternate interior
4. $\angle 8$ and $\angle 5$ vertical
5. $\angle 4$ and $\angle 6$ consecutive interior
6. $\angle 8$ and $\angle 4$ corresponding

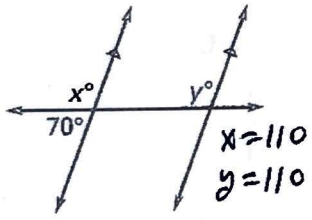


State the postulate or theorem that justifies the statement.

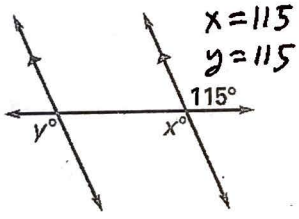
7. $\angle 3 \cong \angle 7$
8. $\angle 3 \cong \angle 6$ skip.
9. $\angle 2 \cong \angle 7$
10. $m\angle 4 + m\angle 6 = 180°$



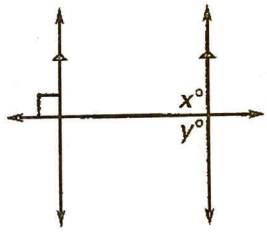
Find the values of x and y.

11. 

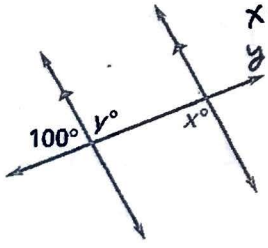
x=110
y=110

12. 

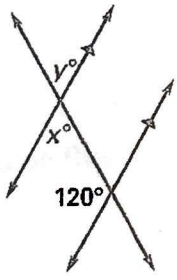
x=115
y=115

13. 

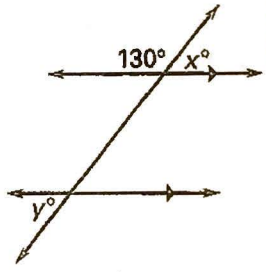
x=90
y=90

14. 

x=80
y=80

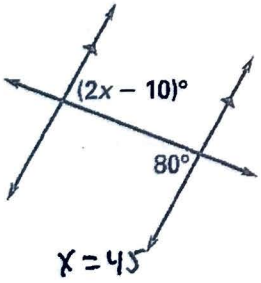
15. 

x=60
y=60

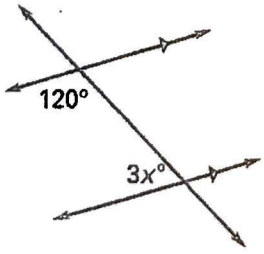
16. 

x=50
y=50

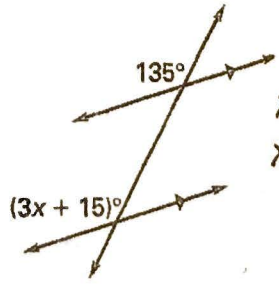
Find the value of x.

17. 

x=45

18. 

x=20

19. 

x=~~5~~
x=40

17 21

LESSON 3.3

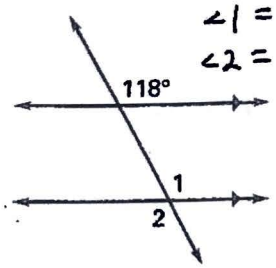
NAME Key DATE

Practice B

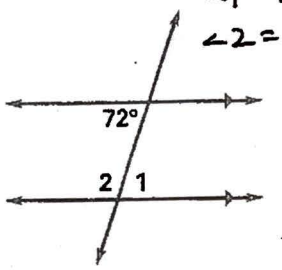
For use with pages 143–149

Find $m\angle 1$ and $m\angle 2$. Explain your reasoning.

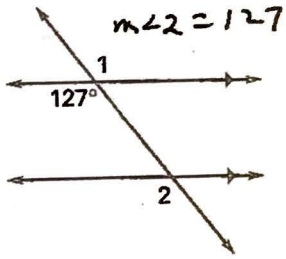
1. $\angle 1 = 118^\circ$, $\angle 2 = 118^\circ$



2. $\angle 1 = 72^\circ$, $\angle 2 = 108^\circ$

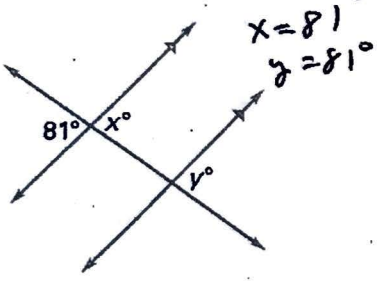


3. $\angle 1 = 127^\circ$, $m\angle 2 = 127^\circ$

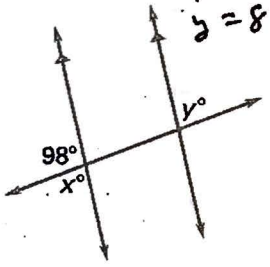


Find the values of x and y.

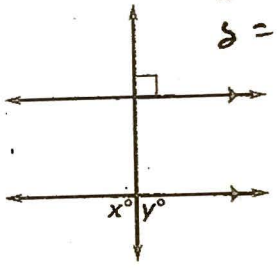
4. $x = 81^\circ$, $y = 81^\circ$



5. $x = 82^\circ$, $y = 82^\circ$

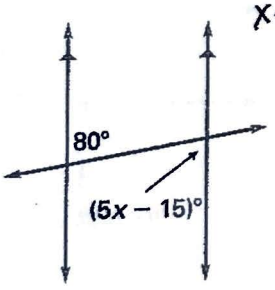


6. $x = 90^\circ$, $s = 90^\circ$

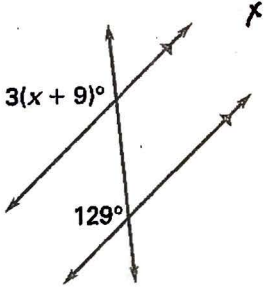


Find the value of x.

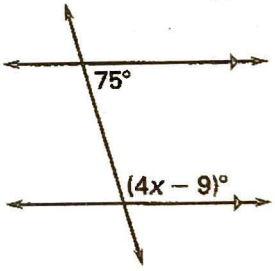
7. $x = 19$



8. $x = 34$



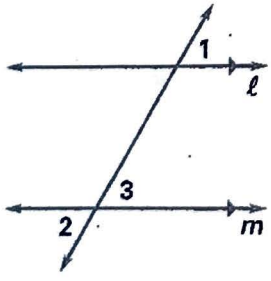
9. $x = 28.5$



10. Complete the flow proof of the Alternate Exterior Angles Theorem.

Given: $\ell \parallel m$

Prove: $\angle 1 \cong \angle 2$



$\ell \parallel m$

a. given

$\angle 1 \cong \angle 3$

b. Corresponding

$\angle 3 \cong \angle 2$

c. Vertical Angles

$\angle 1 \cong \angle 2$

d. Transitive Property $\cong$

i.e., if $a = b$ and $b = c$ then $a = c$.

Lesson 3.3

22
18

Kuta Software - Infinite Geometry

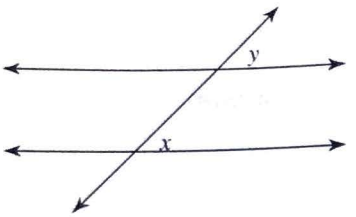
Name_____

Date_____ Period____

Parallel Lines and Transversals

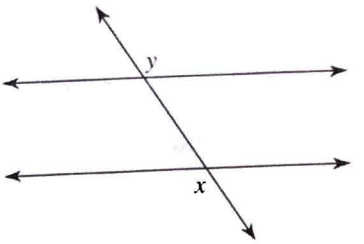
Identify each pair of angles as corresponding, alternate interior, alternate exterior, or consecutive interior.

1)



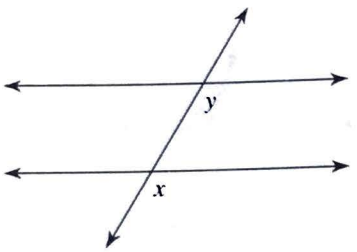
corresponding

2)



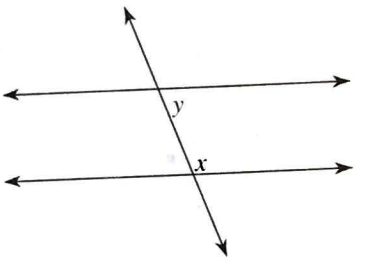
alternate exterior

3)



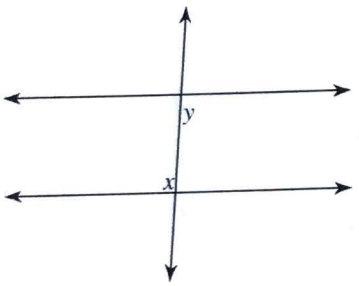
corresponding

4)



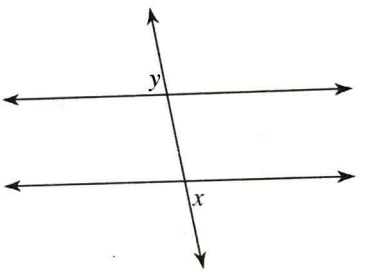
consecutive interior

5)



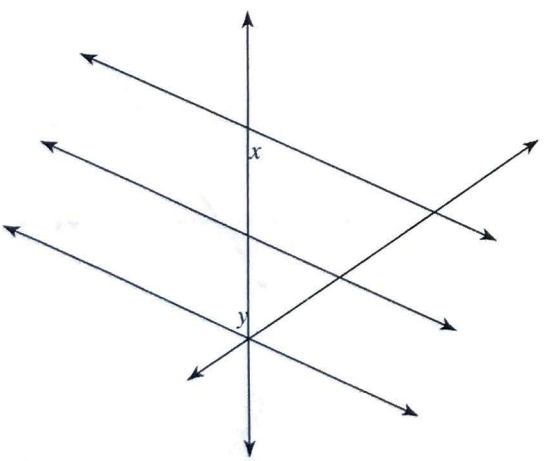
alternate interior

6)



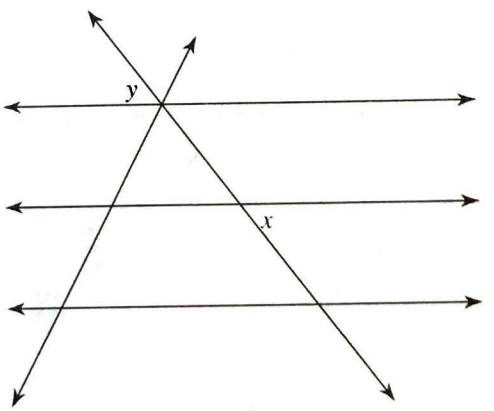
alternate exterior

7)



alternate interior

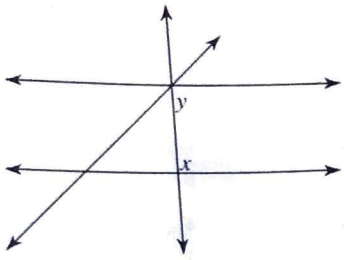
8)



alternate exterior

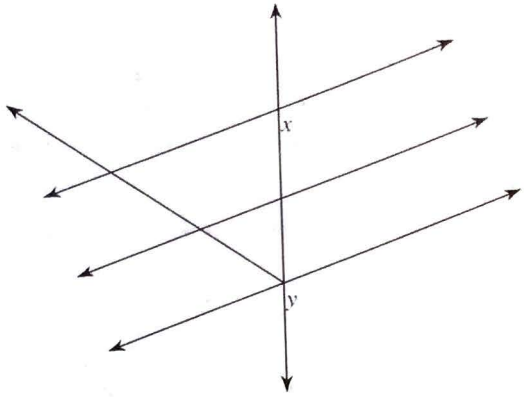
23

9)



consecutive interior

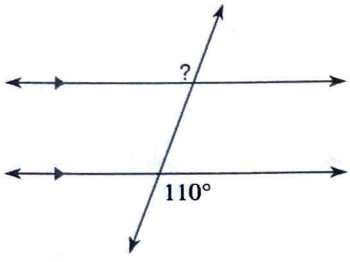
10)



corresponding

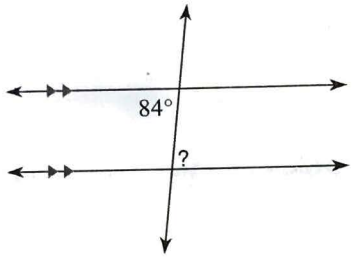
Find the measure of each angle indicated.

11)



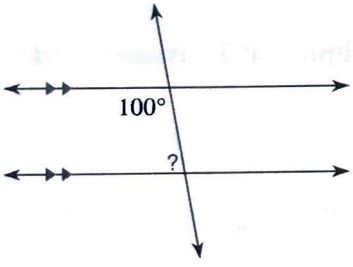
110°

12)



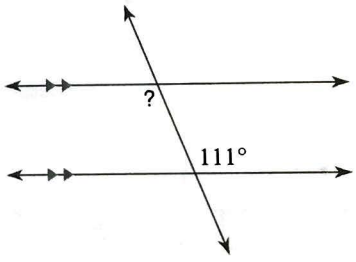
84°

13)



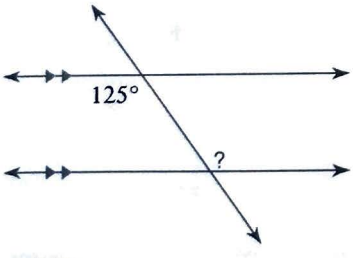
80°

14)



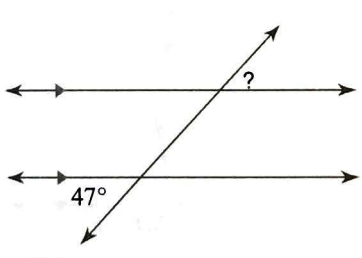
111°

15)



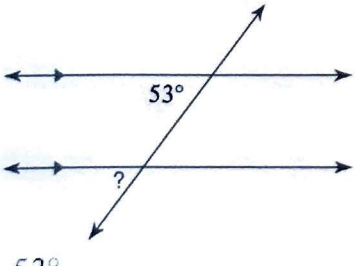
125°

16)



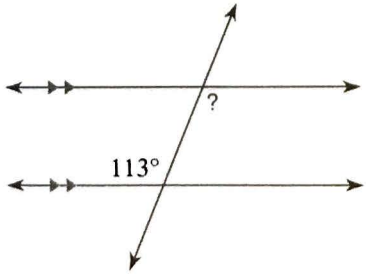
47°

17)



53°

18)

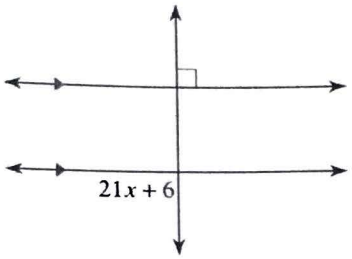


113°

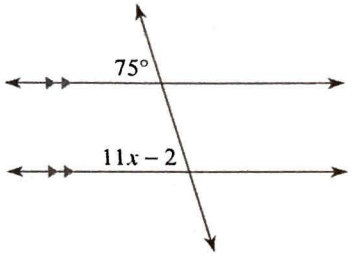
20 24

Solve for x.

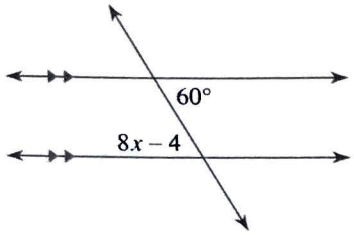
19) 4



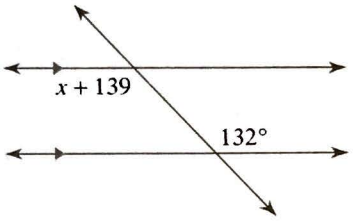
20) 7



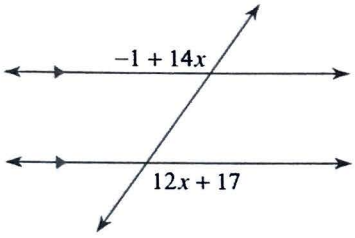
21) 8



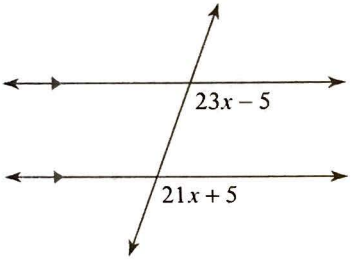
22) −7



23) 9

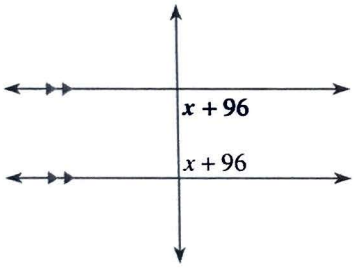


24) 5

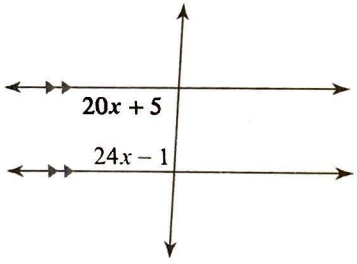


Find the measure of the angle indicated in bold.

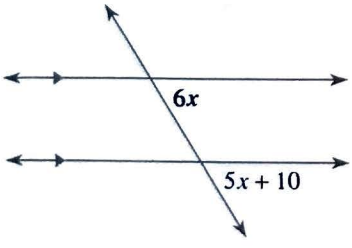
25) 90°



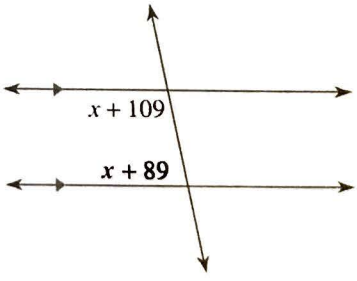
26) 85°



27) 60°



28) 80°



Name * Answers ID: 1

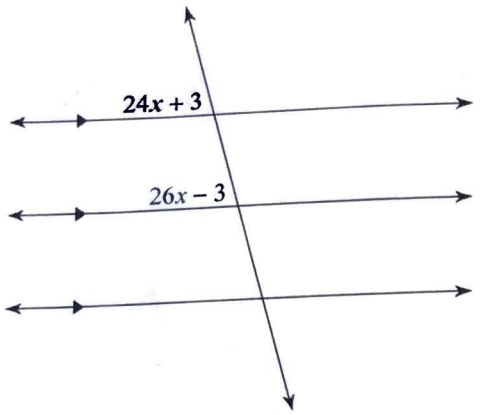
Geometry

Date _____ Period ____

Parallel Lines Cut by Transversals

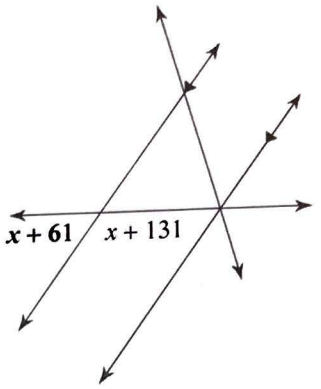
Find the measure of the angle indicated in bold.

1)



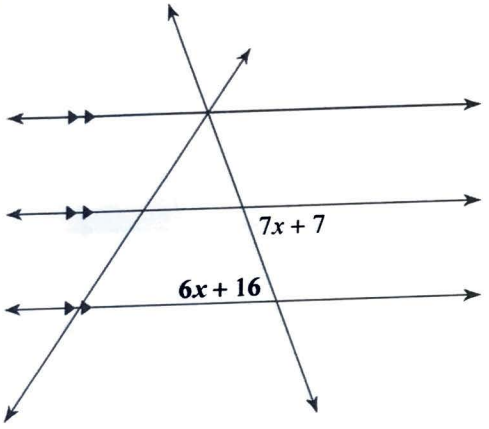
75°

2)



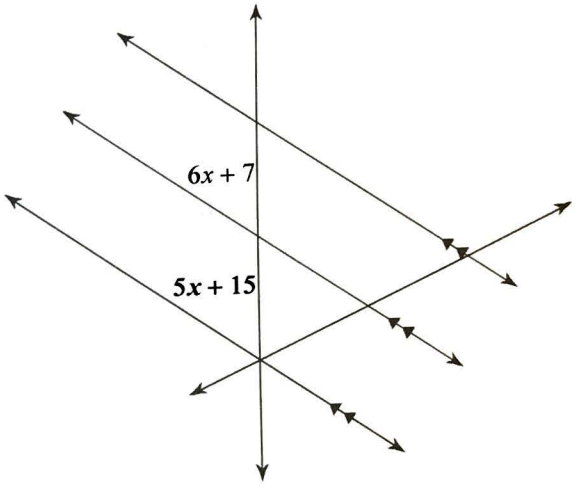
55°

3)



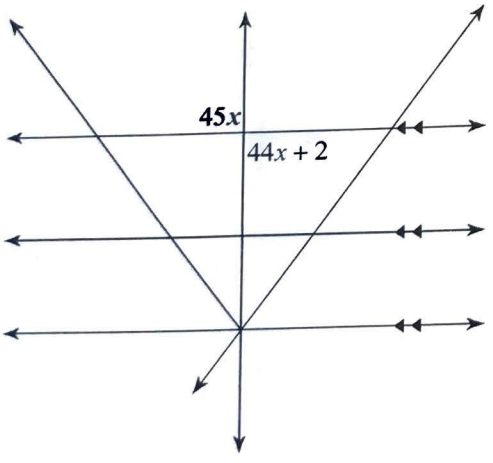
70°

4)



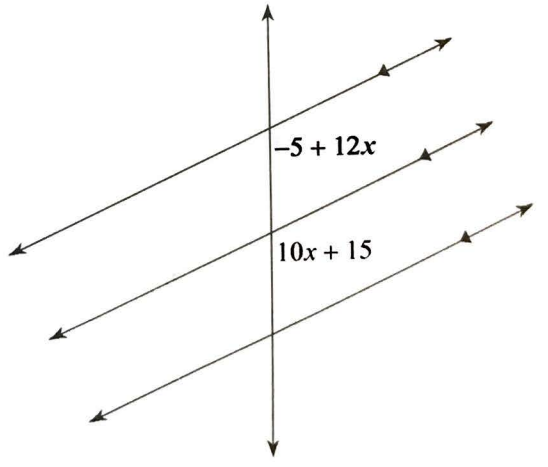
55°

5)



90°

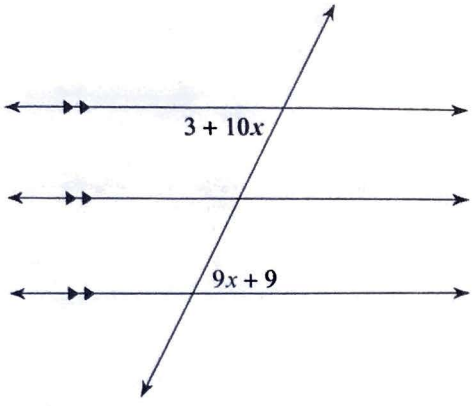
6)



115°

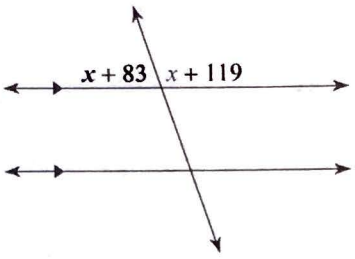
26

7)



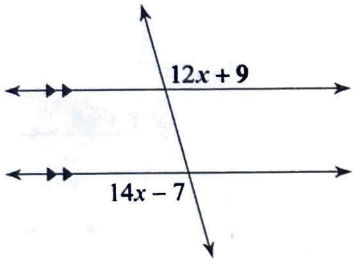
63°

8)



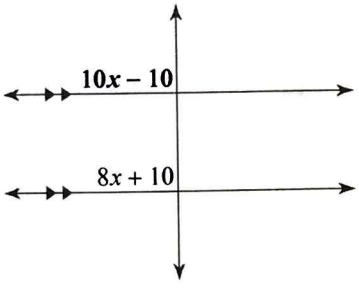
72°

9)



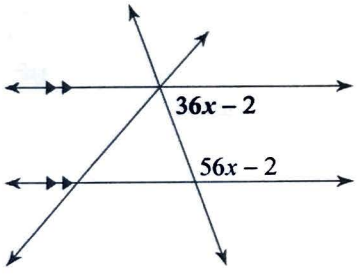
105°

10)



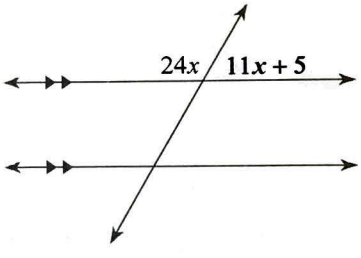
90°

11)



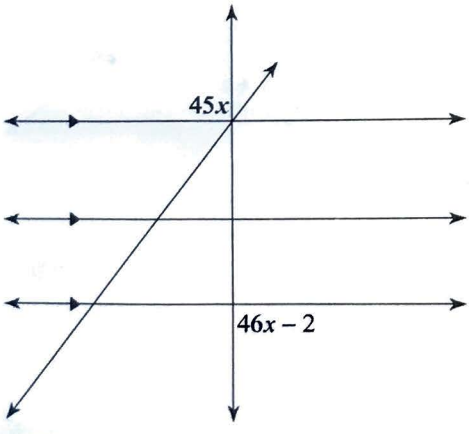
70°

12)



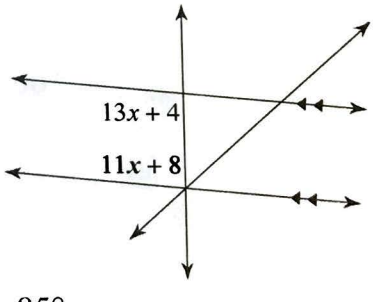
60°

13)



90°

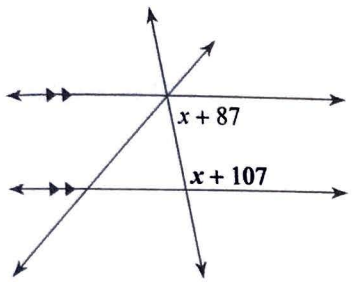
14)



85°

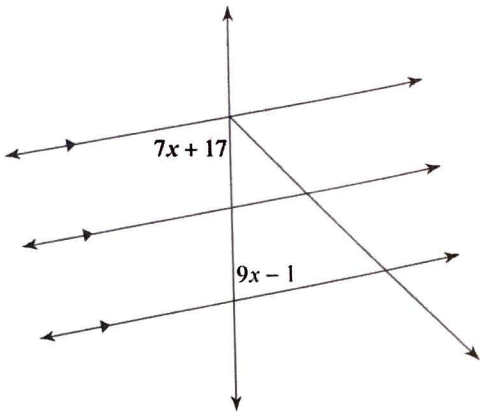
27

15)



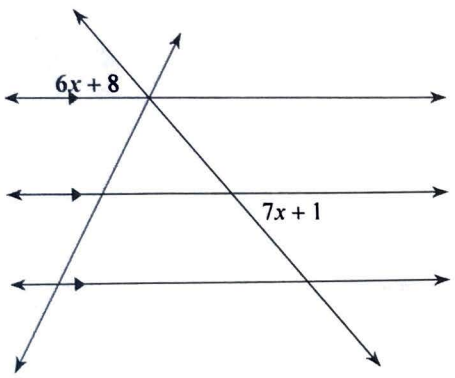
100°

16)



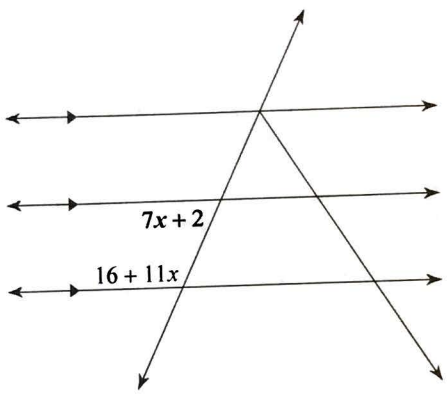
80°

17)



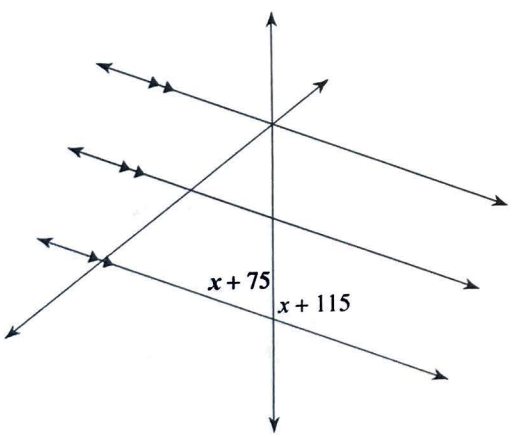
50°

18)



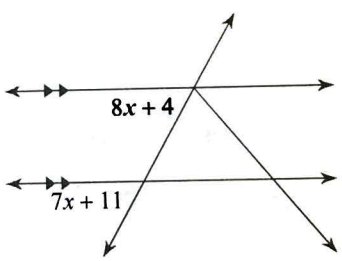
65°

19)



70°

20)



60°

28