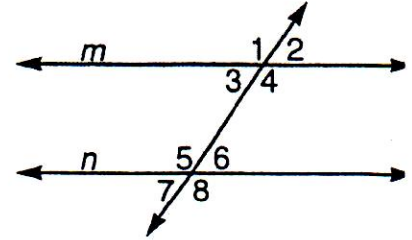# Why Did Orgo Iron His Four-leaf Clover?

Circle the letter of the phrase that best completes any statement below. Write this letter in each box at the bottom of the page that contains the statement number. (The exercises refer to the figure at the right, where m ll n.)

KEEP WORKING AND YOU WILL DISCOVER THE ANSWER TO THE TITLE QUESTION.

1. Two lines that intersect at right angles are
    (L) parallel   (N) perpendicular

2. Two lines in the same plane that never intersect are
    (C) parallel   (K) perpendicular

3. A line that intersects two or more lines at different points is a
    (E) transversal   (A) bisector

4. In the figure, the angles labeled 1, 2, 7, and 8 are
    (B) interior angles   (G) exterior angles

5. The angles labeled 3, 4, 5, and 6 are
    (A) interior angles   (T) exterior angles

6. Pairs of angles such as those labeled 1 and 5, or 4 and 8, are
    (I) corresponding angles   (U) adjacent angles

7. The angles labeled 3 and 6 are
    (K) alternate interior angles   (D) alternate exterior angles

8. The angles labeled 4 and 5 are
    (W) alternate interior angles   (P) alternate exterior angles

9. If two parallel lines are cut by a transversal, then corresponding angles are
    (T) supplementary   (R) congruent

10. If $m\angle 1$ is 125°, then $m\angle 5$ is
    (S) 60°   (H) 125°

11. Alternate interior angles are
    (U) congruent   (O) complementary

12. If $m\angle 3$ is 60°, then $m\angle 6$ is
    (B) 40°   (L) 60°

13. If $m\angle 3$ is 60°, then $m\angle 8$ is
    (S) 120°   (T) 60°

14. When two lines in a plane are cut by a transversal, and if corresponding angles are congruent, then the two lines are
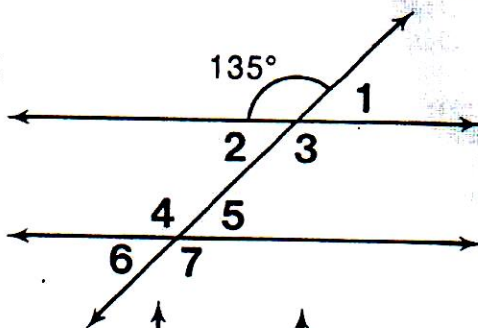   (F) intersecting   (P) parallel

10	3	8	5	13	14	9	3	13	13	6	1	4	10	6	13	12	11	2	7

What is Unusual About The New Surgeon Doll?

Find the answer for any exercise below in the CODE KEY. Notice the letter next to it. Print this letter in the box at the bottom of the page that contains the exercise number. Keep working and you will discover the answer to the title question. (Assume that lines in each figure which do not intersect are parallel.)

In the first figure at the right, find:
① m∠3 =
② m∠4 =
③ m∠2 =
④ m∠5 =
⑤ m∠6 =
⑥ m∠1 =

In the second figure, find:
⑦ m∠1 =
⑧ m∠6 =
⑨ m∠5 =
⑩ m∠7 =
⑪ m∠3 =
⑫ m∠2 =
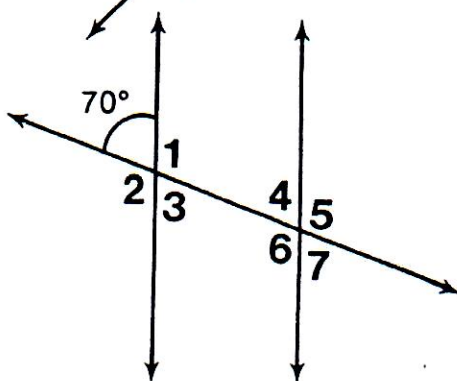
In the third figure, find:
⑬ m∠4 =
⑭ m∠3 =
⑮ m∠5 =
⑯ m∠2 =
⑰ m∠1 =
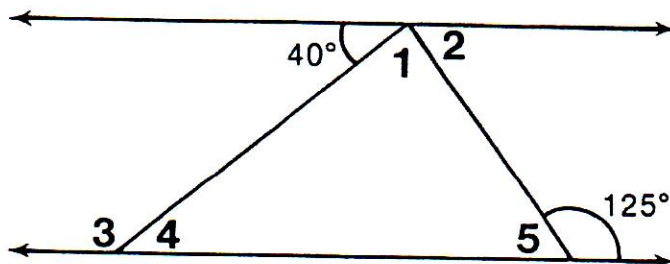
In the fourth figure, find:
⑱ m∠2 =
⑲ m∠4 =
⑳ m∠1 =
㉑ m∠3 =

CODE KEY	
40°	N
45°	E
55°	A
65°	O
70°	S
85°	B
110°	T
115°	R
135°	I
140°	P
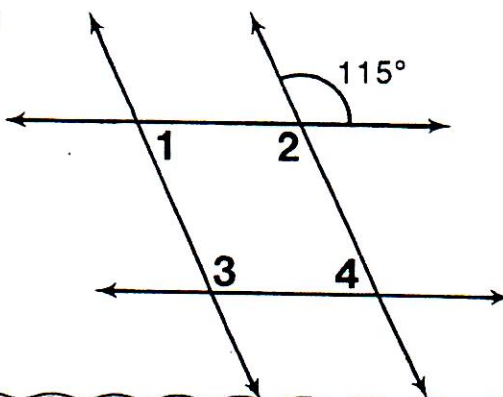
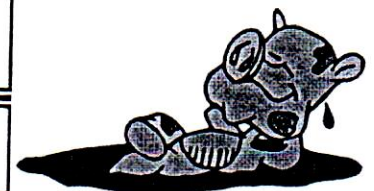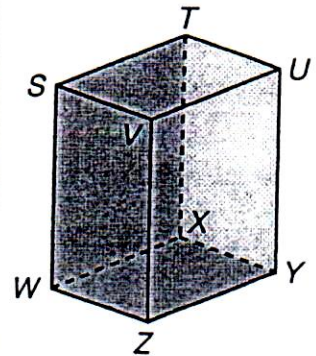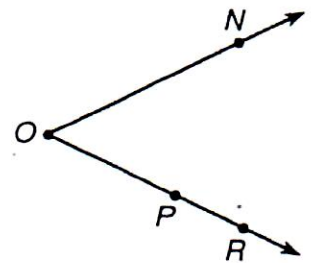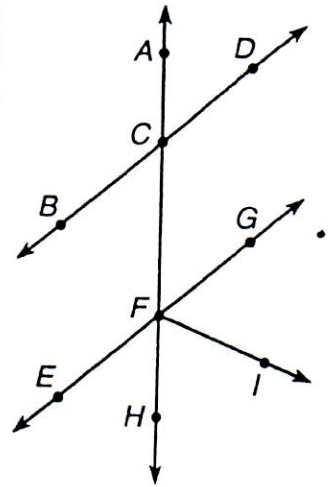| 2	9	20	14	4	21	15	8	3	11	19	13	17	16	12	7	5	18	1	6	10

Where In the House Does Farmer John Keep His Pigs?

Indicate whether the statement is true or false by circling the appropriate letter. Write this letter in the box containing the exercise number. If the statement is false, explain why. Use the figures below.

| T	F	
K	I	**1.** A, C, E, and F are all points on $\overleftrightarrow{AH}$. *If false, why?*
P	S	**2.** $\overleftrightarrow{BD}$ intersects $\overleftrightarrow{AH}$ at F. *If false, why?*
E	V	**3.** $\overleftrightarrow{EF}$, $\overleftrightarrow{GE}$, and $\overleftrightarrow{FG}$ are all names for the same line. *If false, why?*
H	N	**4.** $\overline{CF}$, $\overline{HC}$, and $\overleftrightarrow{FG}$ are all line segments that lie on $\overleftrightarrow{AH}$. *If false, why?*
L	D	**5.** $\overrightarrow{HF}$, $\overrightarrow{HC}$, and $\overrightarrow{HA}$ are all names for the same ray. *If false, why?*
O	I	**6.** $\overrightarrow{AH}$ and $\overrightarrow{HA}$ are two names for the same ray. *If false, why?*
U	A	**7.** $\overrightarrow{AH}$ and $\overrightarrow{CH}$ are two names for the same ray. *If false, why?*
F	E	**8.** $\overleftrightarrow{EG}$ and $\overleftrightarrow{CF}$ are parallel lines. *If false, why?*
S	T	**9.** ∠NOR, ∠PON, and ∠O are all names for the same angle. *If false, why?*
O	I	**10.** ∠RON and ∠NRO are two names for the same angle. *If false, why?*
R	B	**11.** $\overrightarrow{ON}$ and $\overrightarrow{OR}$ are two rays with the same endpoint. *If false, why?*
N	D	**12.** The faces of a rectangular prism are in 6 different planes. *If false, why?*
R	C	**13.** A rectangular prism has 8 vertices and 10 edges. *If false, why?*
M	H	**14.** $\overleftrightarrow{ST}$, $\overleftrightarrow{VU}$, $\overleftrightarrow{XY}$, and $\overleftrightarrow{UW}$ are parallel. *If false, why?*
L	N	**15.** $\overleftrightarrow{ST}$ and $\overleftrightarrow{VZ}$ are neither parallel nor intersecting. *If false, why?*
T	W	**16.** Planes ZWX and STX intersect in $\overleftrightarrow{TY}$. *If false, why?*

10	4	14	6	2	9	16	1	12	3	13	8	15	5	7	11

Geometry Concepts:
Points, Lines, and Planes

# What Do You Call It When 50 People Stand on a Wooden Dock?

Cross out the letters above each correct answer. When you finish, write the remaining letters in the spaces at the bottom of the page.

In Exercises 1-4, fill in the blank.

1. If the sum of the measures of two angles is 180°, the angles are _____.

2. If the sum of the measures of two angles is 90°, the angles are _____.

3. When two angles in a plane share a vertex and a side but no common interior points, they are called _____ angles. Example: ∠AOB and ∠AOD.

4. When two lines intersect, they form two pairs of "opposite" angles called _____ angles. Example: ∠AOB and ∠COD.
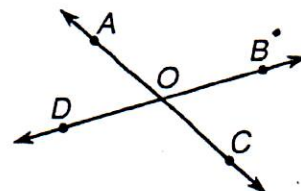
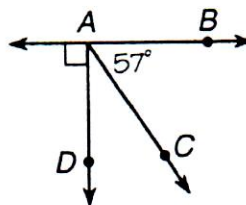**In Exercises 5-14, use the given angle measures to find the required ones.**
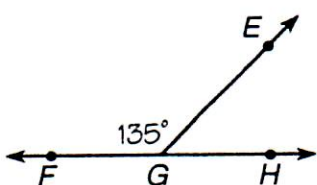
5. m∠EGH
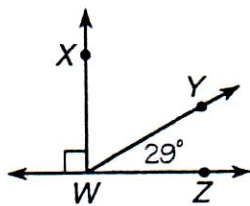
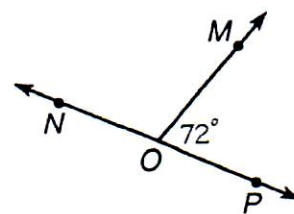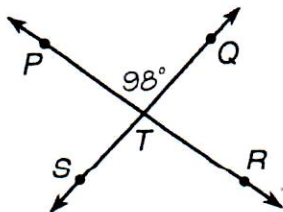6. m∠XWY

7. m∠DAC

8. m∠MON

9. m∠STR
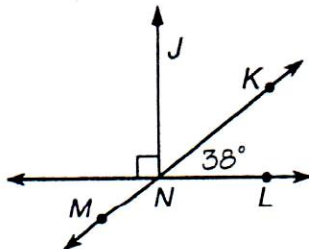
10. m∠PTS

11. m∠JNK
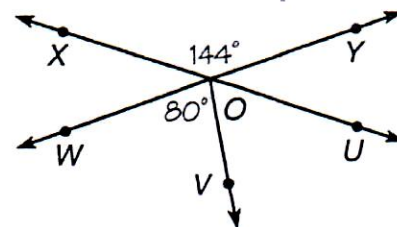
12. m∠MNL

13. m∠YOU

14. m∠UOV

In Exercises 15-18, use an algebraic equation to find the measure of the angle labeled x.

15. $2x$ / x

16. x / $x - 16°$

17. x \ $3x - 20°$

18. x / $2x + 9°$
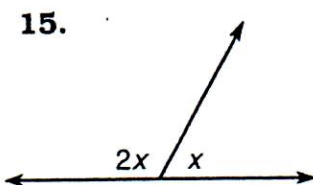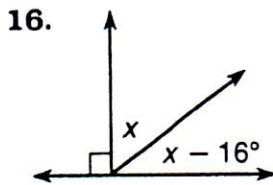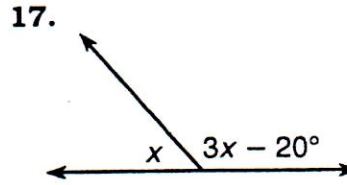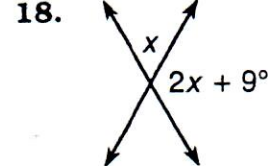
IT	TH	EY	DO	PI	LE	CK	UP	ER	AN	PR	OP
vertical	64°	52°	61°	55°	57°	108°	82°	39°	53°	107°	supplementary
AN	**IC**	**ES**	**IT**	**ON**	**EE**	**SU**	**RF**	**DO**	**RE**	**CK**	**EN**
adjacent	98°	137°	60°	45°	142°	28°	50°	33°	48°	36°	complementary

Geometry Concepts:
Related Angles

Have an Ice Day!

1 What do you call identical twin sisters when both are ice skating champions?

$\overline{141°}$ $\overline{48°}$ $\overline{42°}$ $\overline{44°}$ $\overline{33°}$ $\overline{129°}$ $\overline{42°}$ $\overline{42°}$ $\overline{26°}$ $\overline{69°}$ $\overline{48°}$ $\overline{72°}$ $\overline{83°}$ $\overline{26°}$ $\overline{42°}$ $\overline{70°}$

2 What unfortunate mistake did the champion ice skater make with his gold medal?

$\overline{57°}$ $\overline{42°}$ $\overline{136°}$ $\overline{57°}$ $\overline{135°}$ $\overline{46°}$ $\overline{122°}$ $\overline{141°}$ $\overline{97°}$ $\overline{28°}$ $\overline{62°}$ $\overline{147°}$ $\overline{83°}$ $\overline{26°}$ $\overline{39°}$ $\overline{42°}$ $\overline{46°}$
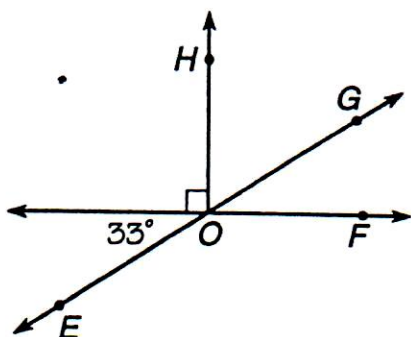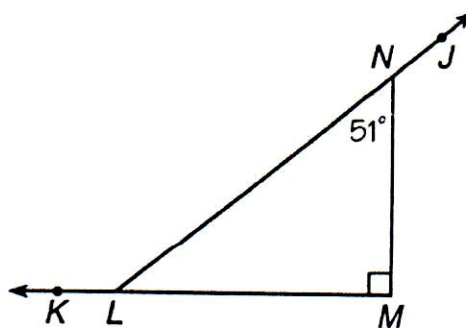
Use the given angle measures to find the angle measures indicated for each figure. Each time your answer appears in the code, write the letter of the exercise above it.
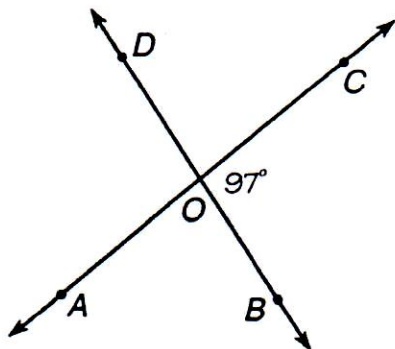
T $m\angle AOD =$

O $m\angle AOB =$

A $m\angle SQR =$

S $m\angle P =$
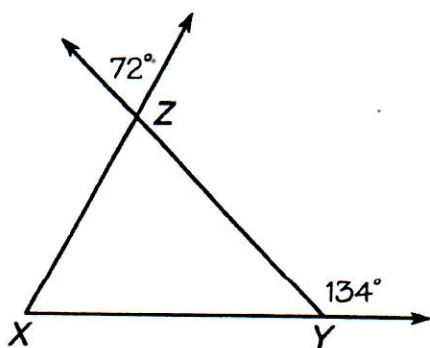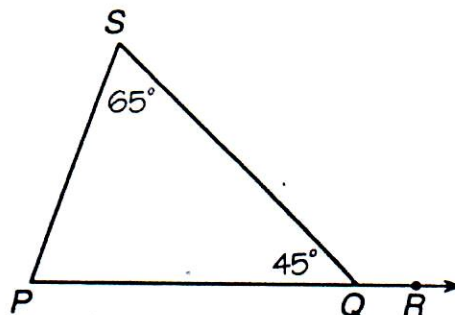
L $m\angle XZY =$

D $m\angle ZYX =$

B $m\angle X =$

U $m\angle JNM =$

Z $m\angle NLM =$

I $m\angle NLK =$

G $m\angle FOG =$

H $m\angle GOH =$

R $m\angle EOF =$

C $m\angle UVW =$

E $m\angle VWU =$

N $m\angle UWT =$

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Geometry Concepts:
Related Angles