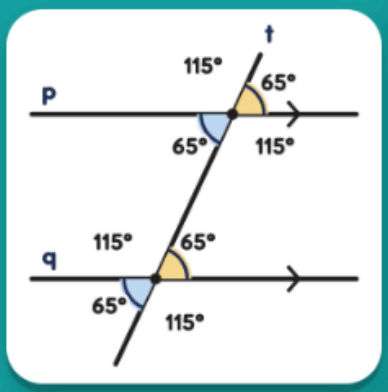
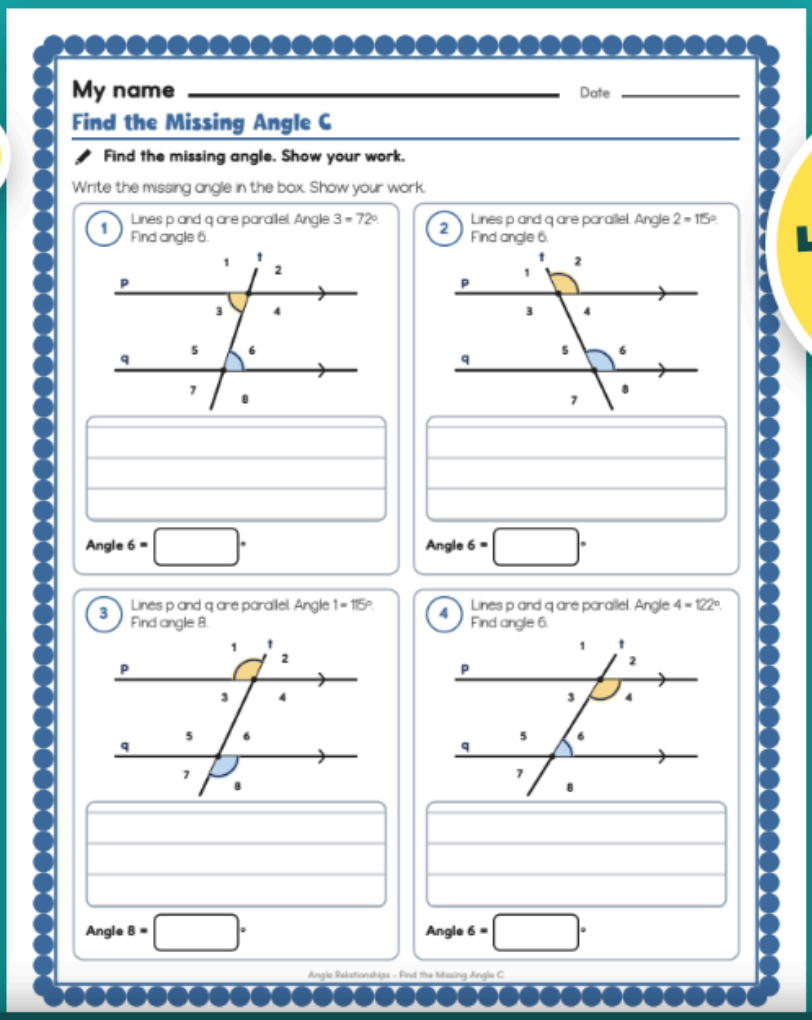
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ANSWER KEY




My name _____ Date _____

Find the Missing Angle C

Find the missing angle. Show your work.

Write the missing angle in the box. Show your work.

1. Lines p and q are parallel. Angle 3 = 72°. Find angle 6.

Angle 6 = ____°

2. Lines p and q are parallel. Angle 2 = 115°. Find angle 6.

Angle 6 = ____°

3. Lines p and q are parallel. Angle 1 = 115°. Find angle 8.

Angle 8 = ____°

4. Lines p and q are parallel. Angle 4 = 122°. Find angle 6.

Angle 6 = ____°

Angle Relationships - Find the Missing Angle C

43 PAGES

ANGLE RELATIONSHIPS

WORKSHEETS · GRADES 7-8

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- Open it in a PDF reader (Adobe Acrobat Reader, Preview, or your browser), click into a line or a box, type, and Save As.
- The name line, every answer box, every ruled work box and every check box on the student pages are type-in fields, and so are the tracker, class grid, team note and family page. You can also print any page and write by hand.
- It works offline. No account, no subscription, no internet connection needed after you download it.

Print at 100 percent

Turn off fit to page and shrink to fit so the ruled lines stay 0.34 inch apart. Every student page is black and white inside a colored border, so it still reads when copied in black and white.

Student work

A filled-in tracker, class grid or team note carries a real student's name. Keep it in the data folder, and use a first name only on any page that leaves your hands.

Need help?

If a field will not behave or a page will not print the way you expect, use Ask a Question on the product page before leaving a review. Every question is read, and a fix to the file ships as a free update: re-download it any time from My Purchases.

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PREVIEW

How To Read a Page

The parts of a student page, then the page types in the order they come.

The parts of a page

- **The answer box.** A bordered box for an angle, x = something, or a word. Click it to type, or print and write in it.
- **The ruled work box.** Lines 0.34 inch apart for showing work. One step to a line.
- **The check box.** Complementary, supplementary and so on; equal or add to 180; yes or not yet: click or mark.
- **The colored angles.** In the name-the-pair pictures, the two angles to look at are filled in gold and blue.
- **The cut line.** Six pieces in a 3 by 2 grid, each 2.4 by 1.25 inches, edge to edge: one cut across and two down.

Page type	What it looks like	What the student does
Words and Parallel Lines	2 pages	Five angle pairs, then the eight angles a transversal makes.
Worked Examples	2 pages	One with numbers, one with x. Each has a guided copy.
Name the Pair	16 pictures	Check every word that fits, name a pair on a transversal.
The Eight Angles	10 answers	One given angle; find the other seven and name three pairs.
Missing Angle	4 pages, 16 problems	Find the angle. No x. Room to show work.
Solve for x	4 pages, 16 problems	Write what you know, find x, then each angle.
Find the Mistake	2 pages, 8 problems	An invented student's work has one mistake. Find it and fix it.
Quizzes, Exit Tickets, Sorts	8 + 6 items, 18 pieces	Two quizzes, six exit tickets, three cut-and-paste mats.

Untimed, unscored on the page

No student page has a timer or a score on it. The keys and the tracker are for you. The answer keys are on pages 33 to 36.

Drawn to scale

Every picture is drawn from the same numbers that print on the page, so a 112 degree angle really is 112 degrees. Students may measure with a protractor to check. Print at 100 percent.

Printing and the type-in fields

Every page prints clean in black and white. The name line, every answer box, every ruled box and every check box are type-in fields in any PDF reader: click one, type, then save. This is a fillable PDF, not a slideshow or a word-processor file.

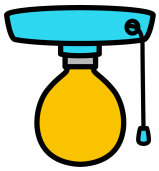
Room to work

Work boxes hold three lines of steps. If a student needs more room, hand over one page a day, or let students work on scrap paper and copy the answer into the box.

PREVIEW

Preview - Bright Path Shed

My name _____ Date _____



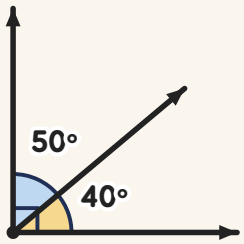
Angle Pairs: The Words

Read about each pair. Fill in the blanks.

Two angles are a pair when they have a special relationship. These five words come up on every page.

Complementary

Two angles that add to 90°.



40° + 50° = ☐

Supplementary

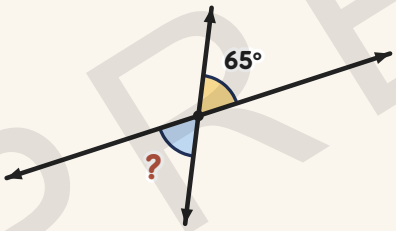
Two angles that add to 180°. They can be apart.



110° + 70° = ☐

Vertical

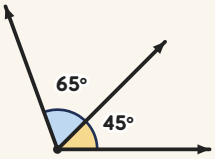
Angles across from each other where two lines cross. They are equal.



If one is 65°, the other is ☐

Adjacent

Side by side. They share a corner point and one side.

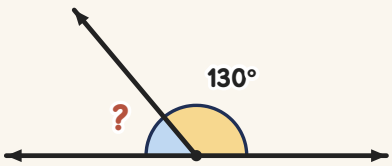


The corner point they share is the

☐

Linear pair

Two adjacent angles on a straight line. They add to 180°.



130° + ? = 180°. ? = ☐

My own example

Pick one pair. Draw it or write it.

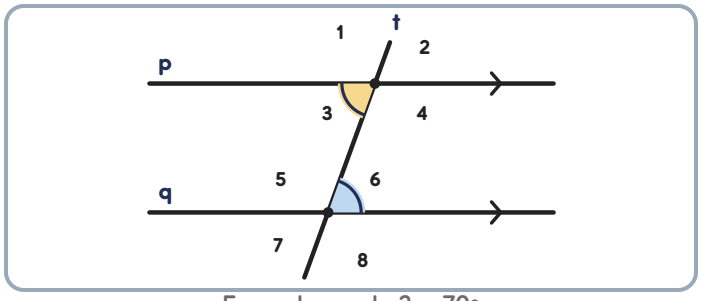
PREVIEW

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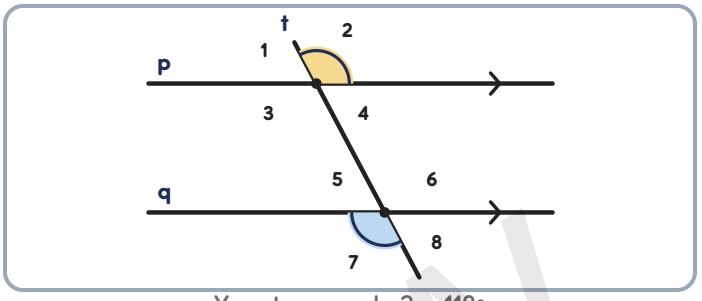
My name _____ Date _____

Worked Example 1

Read the example. Then fill in the blanks.



Example: angle 3 = 70°



Your turn: angle 2 = 118°

Example. The numbers are made up for practice.

Start	70° Angle 3 = 70°. Find angle 6.
Step 1	Alternate interior Look at where angle 3 and angle 6 are. Name the pair.
Step 2	Equal When the lines are parallel, alternate interior angles are equal.
Step 3	Angle 6 = 70° So angle 6 is the same size.
Check	70° + 110° = 180° Angle 6 and angle 5 make a straight line.

Your turn. Do the same steps.

Start	Angle 2 = 118°. Find angle 7. **118°**
Step 1	Name the pair. ☐
Step 2	Equal, or add to 180? ☐ **equal** ☐ **add to 180**
Step 3	Write angle 7. ☐
Check	Angle 7 and angle 8 should add to 180. ☐ + ☐ = ☐

PREVIEW

Preview - Bright Ezee Shop

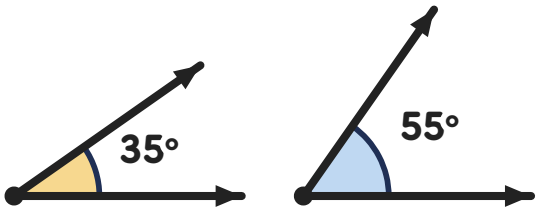
My name _____ Date _____

Name the Pair 1

Look at the two angles. Check every word that fits.

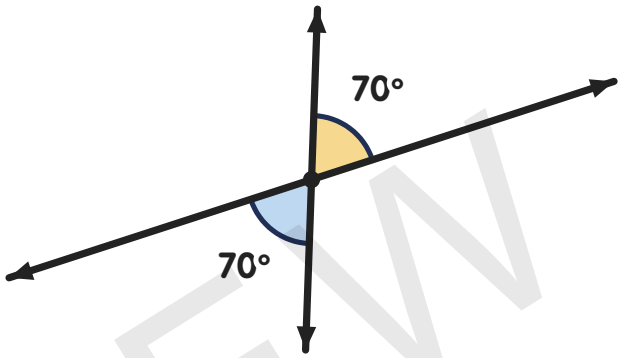
Some pairs have more than one word. Check every word that fits.

1 What are the two colored angles?



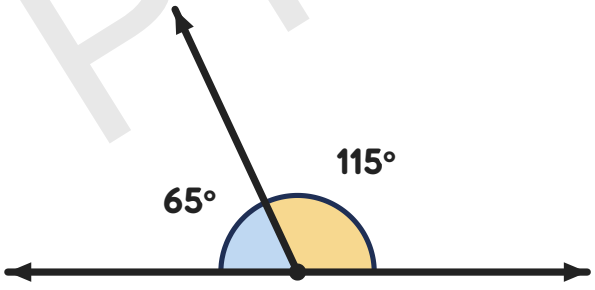
☐ complementary ☐ supplementary
☐ vertical ☐ adjacent
☐ linear pair

2 What are the two colored angles?



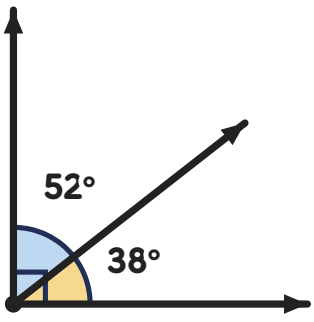
☐ complementary ☐ supplementary
☐ vertical ☐ adjacent
☐ linear pair

3 What are the two colored angles?



☐ complementary ☐ supplementary
☐ vertical ☐ adjacent
☐ linear pair

4 What are the two colored angles?



☐ complementary ☐ supplementary
☐ vertical ☐ adjacent
☐ linear pair

PREVIEW

Preview - Bright Path Shop

My name _____ Date _____

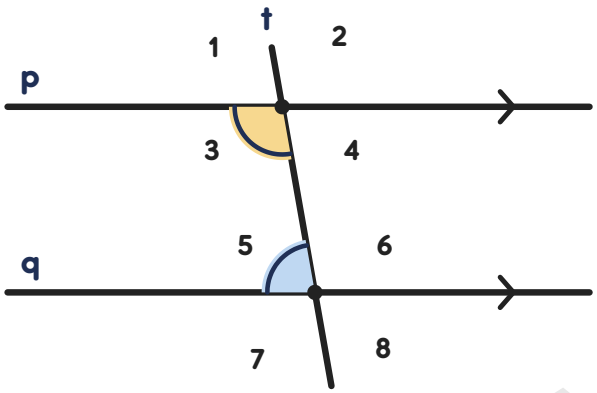
Name the Pair 4

Find the two colored angles. Name the pair.

Use the word bank. Lines p and q are parallel.

corresponding	alternate interior	alternate exterior	same-side interior	vertical	linear pair

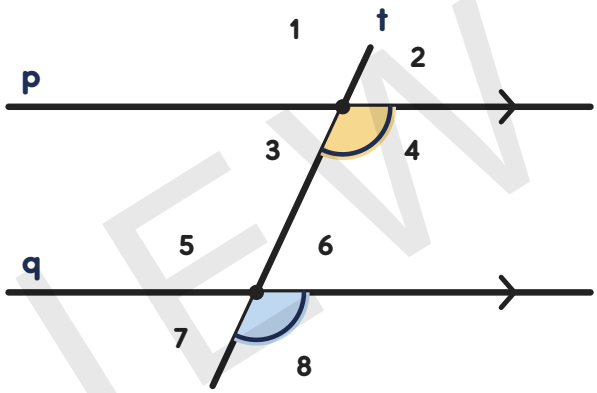
1 Name the pair of colored angles.



Pair: _____

They ☐ are equal ☐ add to 180

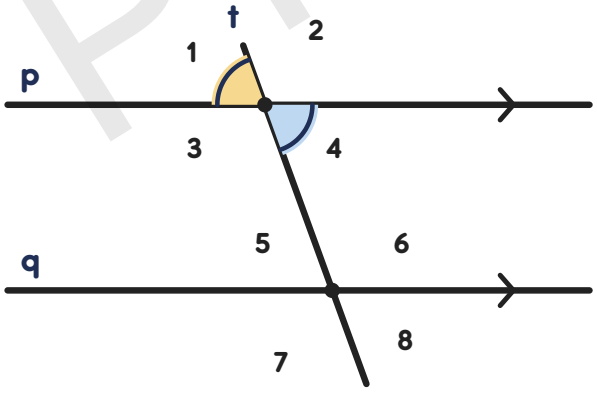
2 Name the pair of colored angles.



Pair: _____

They ☐ are equal ☐ add to 180

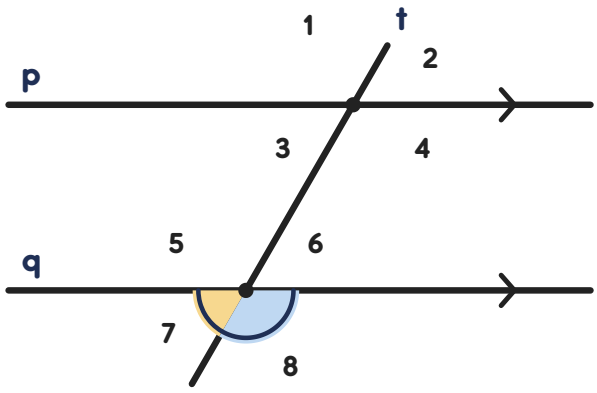
3 Name the pair of colored angles.



Pair: _____

They ☐ are equal ☐ add to 180

4 Name the pair of colored angles.



Pair: _____

They ☐ are equal ☐ add to 180

PREVIEW

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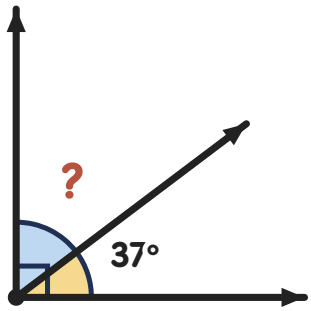
My name _____ Date _____

Find the Missing Angle A

Find the missing angle. Show your work.

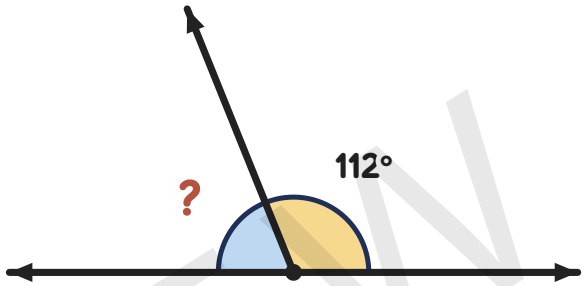
Write the missing angle in the box. Show your work.

1 The two angles are complementary and side by side. Find the missing angle.



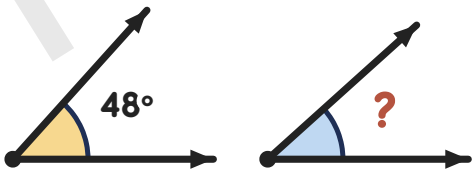
Missing angle = ____ °

2 The two angles are supplementary and side by side. Find the missing angle.



Missing angle = ____ °

3 The two angles are complementary. Find the missing angle.



Missing angle = ____ °

4 The two angles are supplementary. Find the missing angle.



Missing angle = ____ °

PREVIEW

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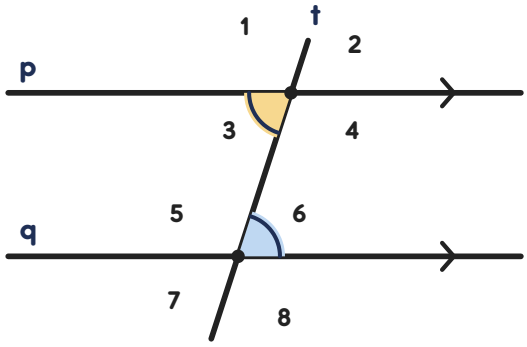
My name _____ Date _____

Find the Missing Angle C

Find the missing angle. Show your work.

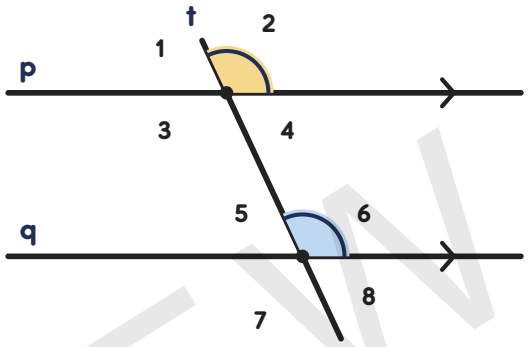
Write the missing angle in the box. Show your work.

1 Lines p and q are parallel. Angle 3 = 72°. Find angle 6.



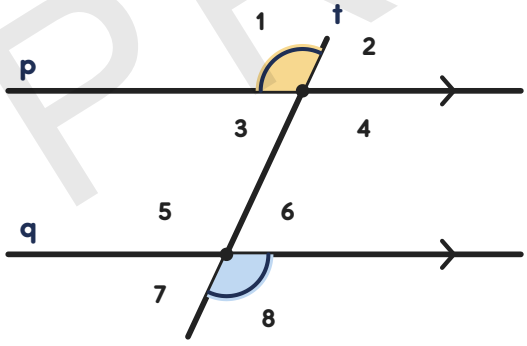
Angle 6 = ____ °

2 Lines p and q are parallel. Angle 2 = 115°. Find angle 6.



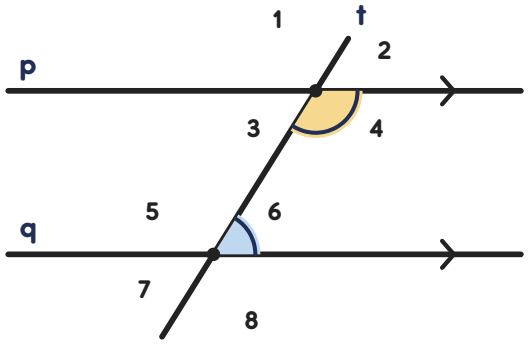
Angle 6 = ____ °

3 Lines p and q are parallel. Angle 1 = 115°. Find angle 8.



Angle 8 = ____ °

4 Lines p and q are parallel. Angle 4 = 122°. Find angle 6.



Angle 6 = ____ °

PREVIEW

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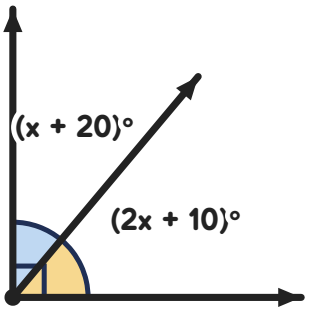
My name _____ Date _____

Solve for x A

Find x. Then find each angle. Show your work.

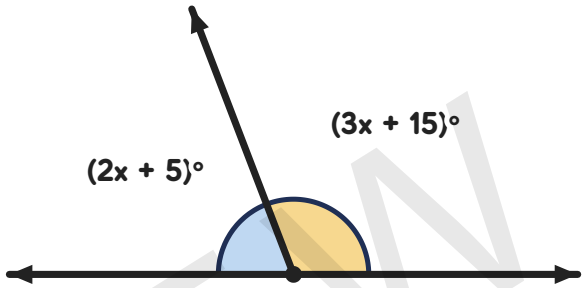
Write what you know. Solve for x. Then put x back in to find each angle.

1 The angles (2x + 10)° and (x + 20)° add to 90. Find x. Then find each angle.



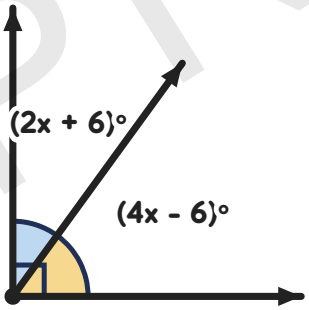
x = ____ angles ____° ____°

2 The angles (3x + 15)° and (2x + 5)° add to 180. Find x. Then find each angle.



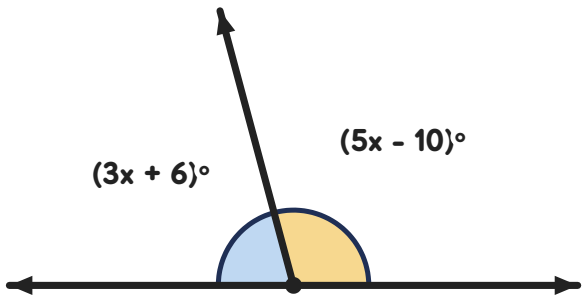
x = ____ angles ____° ____°

3 The angles (4x - 6)° and (2x + 6)° add to 90. Find x. Then find each angle.



x = ____ angles ____° ____°

4 The angles (5x - 10)° and (3x + 6)° add to 180. Find x. Then find each angle.



x = ____ angles ____° ____°

PREVIEW

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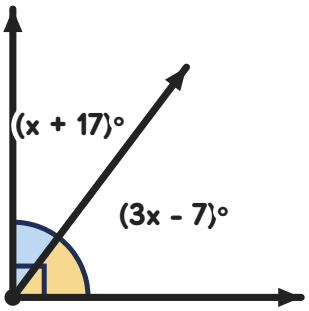
My name _____ Date _____

Solve for x D

Find x. Then find each angle. Show your work.

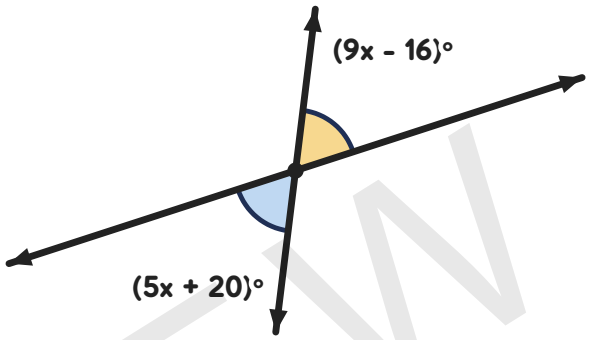
Write what you know. Solve for x. Then put x back in to find each angle.

1 The angles (3x - 7)° and (x + 17)° add to 90. Find x. Then find each angle.



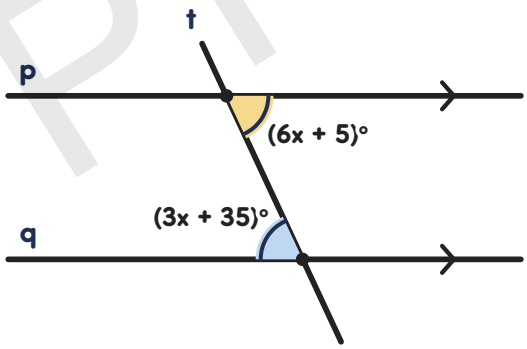
x = ____ angles ____° ____°

2 The angles (9x - 16)° and (5x + 20)° are equal. Find x. Then find each angle.



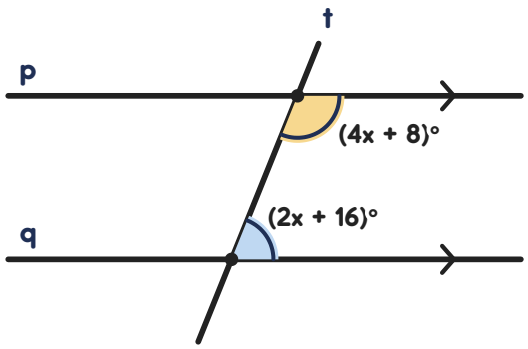
x = ____ angles ____° ____°

3 The angles (6x + 5)° and (3x + 35)° are equal. The lines are parallel. Find x. Then find each angle.



x = ____ angles ____° ____°

4 The angles (4x + 8)° and (2x + 16)° add to 180. The lines are parallel. Find x. Then find each angle.



x = ____ angles ____° ____°

PREVIEW

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My name _____ Date _____

Find the Mistake 2

Find the mistake. Then fix it.

Sam is made up for practice. Each problem has one mistake.

1 The vertical angles (5x - 12)° and (3x + 18)° are equal. Find the angle.

Sam solved it like this:

1. 5x - 12 = 3x + 18
2. 2x = 30
3. x = 15
4. The angle is 15°

The mistake is on line

☐ 1 ☐ 2 ☐ 3 ☐ 4

Fix it. Write the right answer.

2 The angles (3x + 20)° and (x + 40)° form a linear pair. Find x.

Sam solved it like this:

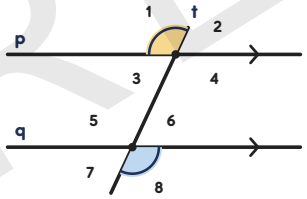
1. (3x + 20) + (x + 40) = 180
2. 4x + 60 = 180
3. 4x = 240
4. x = 60

The mistake is on line

☐ 1 ☐ 2 ☐ 3 ☐ 4

Fix it. Write the right answer.

3 Lines p and q are parallel. Angle 1 = 115°. Find angle 8.



Sam solved it like this:

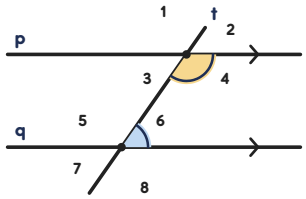
1. 1 and 8 are alternate exterior
2. Alternate exterior angles add to 180
3. 8 = 180 - 115 = 65°

The mistake is on line

☐ 1 ☐ 2 ☐ 3

Fix it. Write the right answer.

4 Lines p and q are parallel. Angle 4 = 125°. Find angle 6.



Sam solved it like this:

1. 4 and 6 are same-side interior
2. Same-side interior angles are equal
3. 6 = 125°

The mistake is on line

☐ 1 ☐ 2 ☐ 3

Fix it. Write the right answer.

PREVIEW

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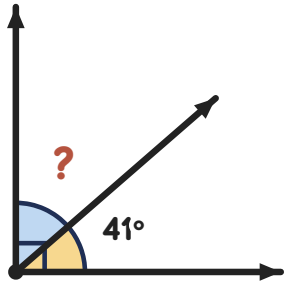
My name _____ Date _____

Quiz A

Solve each one. Show your work.

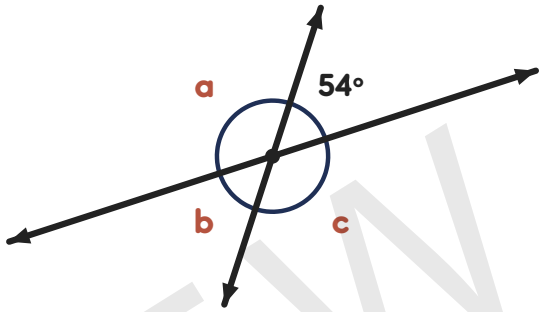
Take your time. Show your work in the box.

1 The two angles are complementary and side by side. Find the missing angle.



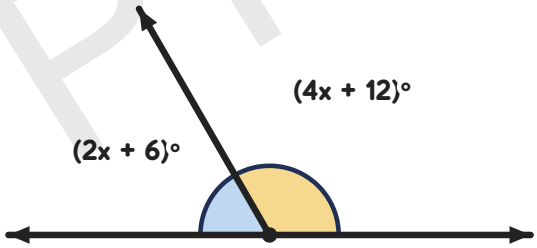
Missing angle = ____ °

2 Two lines cross. Find a, b and c.



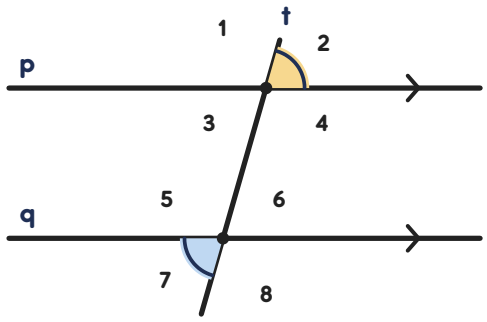
a = ____ ° **b =** ____ ° **c =** ____ °

3 The angles (4x + 12)° and (2x + 6)° add to 180. Find x. Then find each angle.



x = ____ **angles** ____ ° ____ °

4 Lines p and q are parallel. Angle 2 = 74°. Find angle 7.



Angle 7 = ____ °

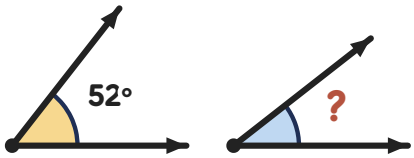
PREVIEW

My name _____ Date _____

Exit Tickets 2

Solve each one. Tell how sure you are.

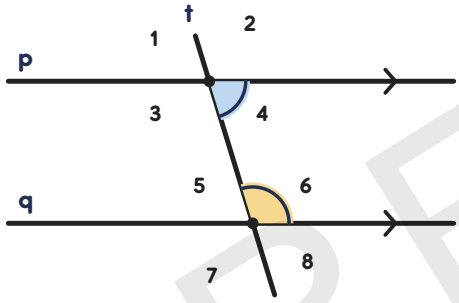
Exit ticket 4 The two angles are complementary. Find the missing angle.



Missing angle = ☐ °

How sure am I? ☐ sure ☐ kind of sure ☐ not sure

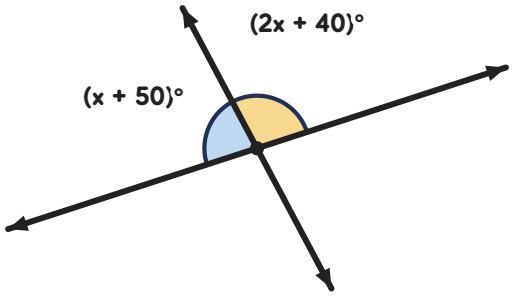
Exit ticket 5 Lines p and q are parallel. Angle 6 = 107°. Find angle 4.



Angle 4 = ☐ °

How sure am I? ☐ sure ☐ kind of sure ☐ not sure

Exit ticket 6 The angles (2x + 40)° and (x + 50)° add to 180. Find x. Then find each angle.



x = ☐ **angles** ☐ ° ☐ °

How sure am I? ☐ sure ☐ kind of sure ☐ not sure

PREVIEW

Preview - Bright Path Sped

My name _____ Date _____

Cut and Paste 2

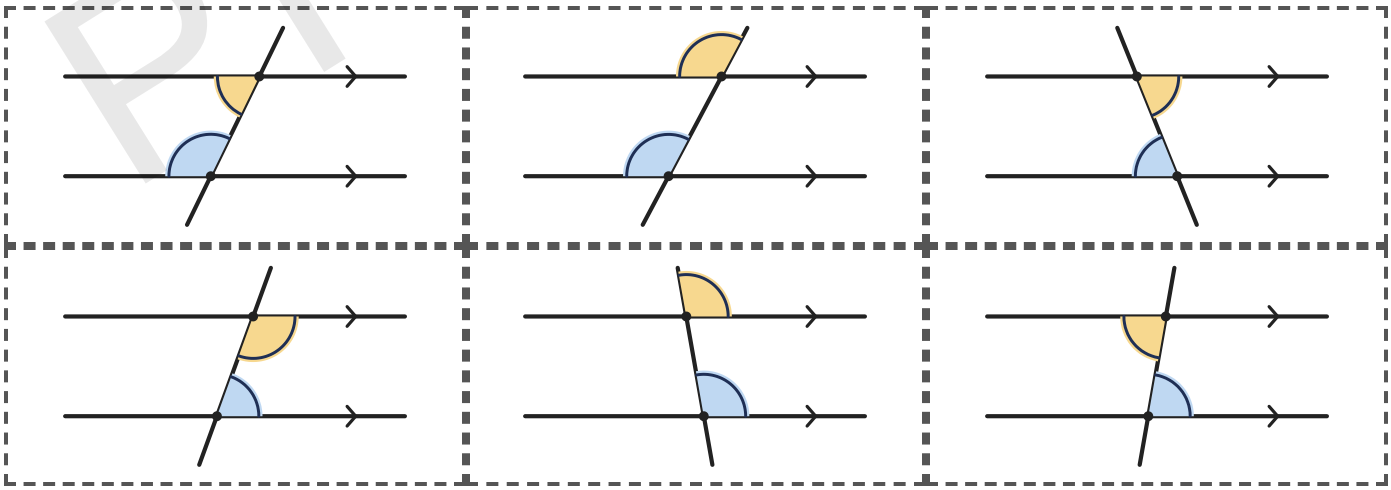
Cut out the six pieces. Paste each one in the right box.

Find the two colored angles in each picture. The lines are parallel.

Corresponding	Alternate interior	Same-side interior

PREVIEW

Cut on the dashed lines: six pieces, one cut across and two cuts down.



How did you tell alternate from same-side?

My name _____ Date _____

Check My Own Work

Check your own work. Mark yes or not yet.

1	I can name complementary, supplementary, vertical, adjacent and linear pair.	☐ yes	☐ not yet
2	I know complementary angles add to 90 and supplementary angles add to 180.	☐ yes	☐ not yet
3	I can find the eight angles when a transversal crosses parallel lines.	☐ yes	☐ not yet
4	I can name corresponding, alternate and same-side angles.	☐ yes	☐ not yet
5	I write the sum or the match when the angles have x in them.	☐ yes	☐ not yet
6	I put x back in to find each angle.	☐ yes	☐ not yet
7	I check that my angles add to 90 or 180, or are equal.	☐ yes	☐ not yet
8	I can explain my steps to a partner.	☐ yes	☐ not yet

The kind of angle problem I can do now is...

The kind I still need help with is...

PREVIEW

Answer Key: Missing Angles and x

Every problem, its answer and, for solve for x, the setup and both angles.

Find the Missing Angle pages 14, 15, 16, 17

Item	Problem	Answer
14.1	complementary, side by side, 37° given	53°
14.2	supplementary, side by side, 112° given	68°
14.3	complementary, apart, 48° given	42°
14.4	supplementary, apart, 135° given	45°
15.1	two lines cross, 65° given	a = 115°, b = 65°, c = 115°
15.2	two lines cross, 130° given	a = 50°, b = 130°, c = 50°
15.3	two lines cross, 105° given	a = 75°, b = 75°, c = 105°
15.4	two lines cross, 128° given	a = 52°, b = 128°, c = 52°
16.1	p, q parallel. Angle 3 = 72°, find angle 6	72° (alternate interior)
16.2	p, q parallel. Angle 2 = 115°, find angle 6	115° (corresponding)
16.3	p, q parallel. Angle 1 = 115°, find angle 8	115° (alternate exterior)
16.4	p, q parallel. Angle 4 = 122°, find angle 6	58° (same-side interior)
17.1	p, q parallel. Angle 5 = 55°, find angle 4	55° (alternate interior)
17.2	p, q parallel. Angle 7 = 48°, find angle 2	48° (alternate exterior)
17.3	p, q parallel. Angle 1 = 75°, find angle 5	75° (corresponding)
17.4	p, q parallel. Angle 3 = 64°, find angle 5	116° (same-side interior)

Solve for x pages 18, 19, 20, 21

Item	Setup	x	Angles
18.1	(2x + 10) + (x + 20) = 90	x = 20	50° and 40°
18.2	(3x + 15) + (2x + 5) = 180	x = 32	111° and 69°
18.3	(4x - 6) + (2x + 6) = 90	x = 15	54° and 36°
18.4	(5x - 10) + (3x + 6) = 180	x = 23	105° and 75°
19.1	5x - 12 = 3x + 18	x = 15	63° and 63°
19.2	(3x + 20) + (x + 40) = 180	x = 30	110° and 70°
19.3	6x - 15 = 4x + 7	x = 11	51° and 51°
19.4	(2x + 35) + (3x + 25) = 180	x = 24	83° and 97°
20.1	6x - 14 = 4x + 10	x = 12	58° and 58°
20.2	5x - 8 = 3x + 22	x = 15	67° and 67°
20.3	(2x + 30) + (3x + 10) = 180	x = 28	86° and 94°
20.4	8x - 20 = 5x + 13	x = 11	68° and 68°
21.1	(3x - 7) + (x + 17) = 90	x = 20	53° and 37°
21.2	9x - 16 = 5x + 20	x = 9	65° and 65°
21.3	6x + 5 = 3x + 35	x = 10	65° and 65°
21.4	(4x + 8) + (2x + 16) = 180	x = 26	112° and 68°

How the answers were made

Every angle was computed from the picture's own numbers, and every x was solved with exact fractions and put back into both expressions. The two angles are shown so a student's check is easy to read. Accept any correct method.

PREVIEW

Angle Relationships Tracker

One student, every scored page. Filled example: page 41.

Student _____ Teacher _____ Month _____

Page	Page type and set	Items	Right	Date	Notes
9	Name the Pair 1	4			
10	Name the Pair 2	4			
11	Name the Pair 3	4			
12	Name the Pair 4	4			
13	The Eight Angles	10			
14	Find the Missing Angle A	4			
15	Find the Missing Angle B	4			
16	Find the Missing Angle C	4			
17	Find the Missing Angle D	4			
18	Solve for x A	4			
19	Solve for x B	4			
20	Solve for x C	4			
21	Solve for x D	4			
22	Find the Mistake 1	4			
23	Find the Mistake 2	4			
25	Quiz A	4			
26	Quiz B	4			
27	Exit Tickets 1	3			
28	Exit Tickets 2	3			
29	Cut and Paste 1	6			
30	Cut and Paste 2	6			
31	Cut and Paste 3	6			

PREVIEW

How to fill this in

Write how many items the student got right with no prompt, and the date. A blank means not tried yet, never wrong. There are 98 items on the 22 scored pages. Answer keys: pages 33 to 36. Filled example: page 41.

This month we are working on (your own standard or wording)

Team Note

Use this page between team meetings or when a student moves classes, to hand off what changed without writing a note from scratch. Everything below is observable, with a blank for the number or the wording your team already uses.

Student _____ Team member _____ Date _____

Page type	Covered since last note (Y/N)	Items right	Still blank
Name the pair			
Eight angles			
Missing angle			
Solve for x			
Find the mistake			
Quizzes			
Exit tickets			
Sorts			

What I saw (observable, not a conclusion)

- Named ___ of ___ angle pairs correctly without a prompt.
- Found ___ of ___ missing angles with no x (pages 14, 15, 16, 17).
- Solved for x correctly on ___ of ___ problems (pages 18, 19, 20, 21).
- Checked the answer by adding to 90 or 180, or by comparing equal angles: yes / no / with a reminder.

Next step

- Next page or set: ___, because ___ (what you saw).
- What to try in another class or at home: ___.
- What to keep doing because it is working: ___.
- Anything for the team meeting to decide: ___ (this page records what happened, never a label or a plan).

Summary, in one or two sentences, for whoever reads this next

A filled-in line, for reference

"Named 2 of 4 angle pairs on a transversal on 10/8. Next step: use the word bank and ask which side of the transversal each angle is on." That is the level of detail this page is built for. It matches the filled example on page 41.

PREVIEW

Maya's Tracker (Invented Student)

Maya R. is invented; nothing on this page describes a real student. The blank tracker is on page 37.

Student	Teacher	Month
Maya R. (an invented student)	Mr. Okafor (invented)	October

Page	Page type and set	Items	Right	Date	Notes
9	Name the Pair 1	4	3	10/6	Called 38 and 52 vertical
10	Name the Pair 2	4	4	10/7	-
11	Name the Pair 3	4	2	10/8	Mixed up alternate and same-side
12	Name the Pair 4	4	-	-	-
13	The Eight Angles	10	8	10/9	Missed one pair name
14	Find the Missing Angle A	4	4	10/13	-
15	Find the Missing Angle B	4	-	-	-
16	Find the Missing Angle C	4	3	10/15	Used 180 for equal angles
17	Find the Missing Angle D	4	-	-	-
18	Solve for x A	4	3	10/17	Sign slip on a minus
19	Solve for x B	4	2	10/20	Added when the angles were equal
20	Solve for x C	4	-	-	-
21	Solve for x D	4	-	-	-
22	Find the Mistake 1	4	3	10/22	Found the line, one fix not finished
23	Find the Mistake 2	4	-	-	-
25	Quiz A	4	-	-	-
26	Quiz B	4	-	-	-
27	Exit Tickets 1	3	-	-	-
28	Exit Tickets 2	3	-	-	-
29	Cut and Paste 1	6	-	-	-
30	Cut and Paste 2	6	-	-	-
31	Cut and Paste 3	6	-	-	-

How to read it

Maya R. has done **9 of 22** scored pages and got **32 of 42** items right with no prompt. **2** pages were all right and **7** carry a note. Every number comes from the table.

What the table points to

The lowest pages are Name the Pair 3 (2 of 4) and Solve for x B (2 of 4). Those are where the next practice goes. The 13 pages left blank are not tried yet, never wrong.

PREVIEW