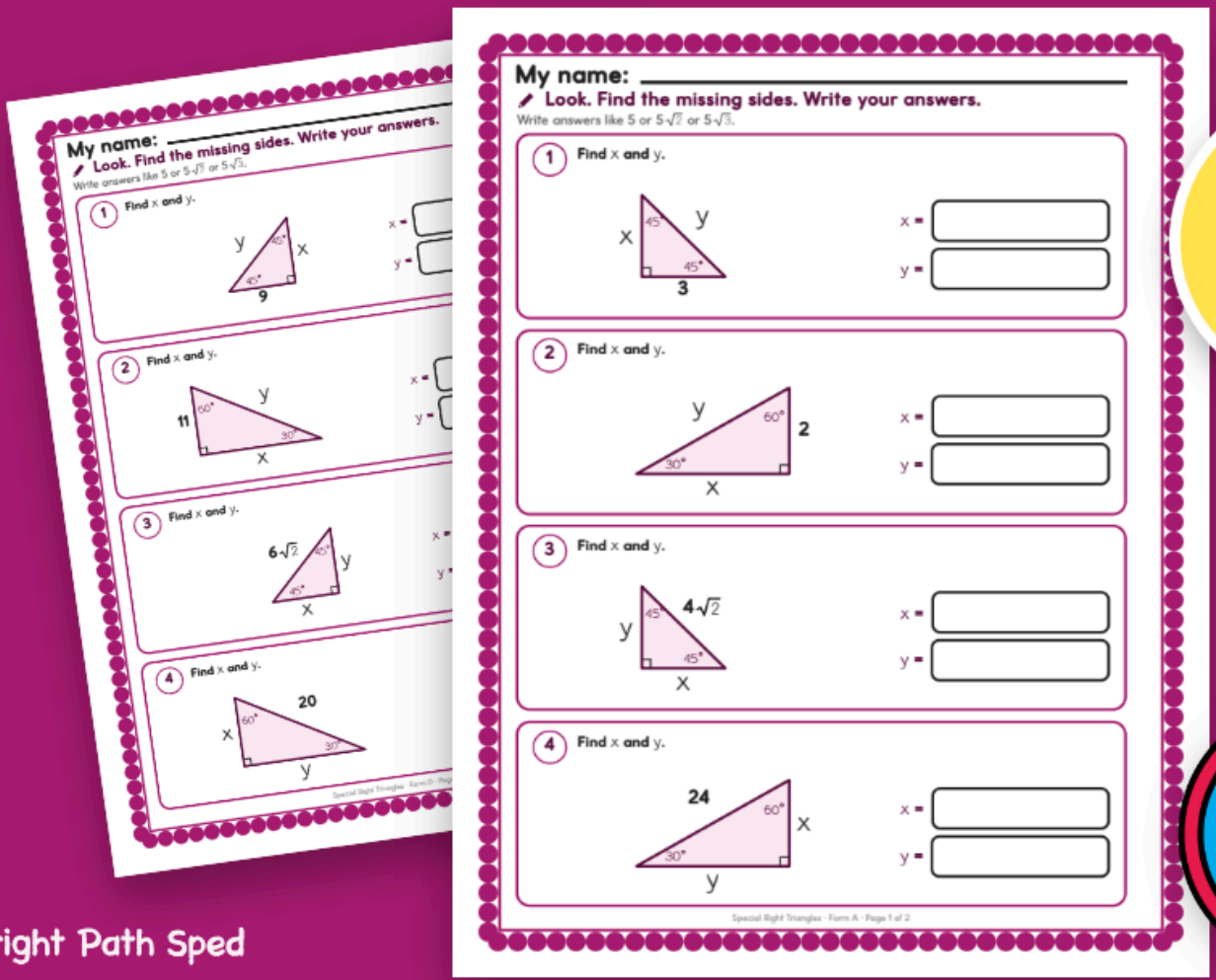
SPECIAL RIGHT TRIANGLES

PROGRESS MONITORING PROBES



GR. 9-10



Bright Path Sped

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Please read before you print and fill in your first form.

One classroom license

- This file is for one classroom: one teacher, one caseload.
- Please do not share it, post it online, or sell it.
- Extra licenses for a team or a school are available on the product page.

This is a fillable PDF

- Open it in a PDF reader (Adobe Acrobat Reader, Preview, or your browser), click into a line or box, type, and Save As once per student.
- Print one copy of both pages of a form per student per week: the student writes on the form and that same sheet is the one you score.
- It works offline. No account, no subscription, no internet connection needed after you download it.

Student data

Completed pages carry a real student's name and scores. Store, hand over and destroy this file the same way you would any other student record.

Need help?

If a field will not behave, a page will not print the way you expect, or anything here looks wrong, 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

Preview · Bright Path Sped

Binder Cover, Spine Label & Divider Tabs

A binder cover, six divider tabs, and a short setup list.

Binder cover & spine label

Student _____ Case manager _____ School year _____

Goal start date _____ Next review date _____

Cut along the outer edge and use as a binder cover, a folder label, or a clipboard cover for this student's probe folder.

Divider tabs — print and cut

01 Start Here
The six-step routine, one page.

02 The Goal
The written goal, directions, and where forms A–D fit.

03 Probe Forms
The 4 rotating forms, two pages each, one form per week.

04 Graph & Decision
The aim line, the weekly plot, the three-in-a-row rule.

05 Caseload Summary
Every student on this goal, one grid, once a month.

06 Family Update
The note home and the handoff sheet, ready to fill in.

PREVIEW

Before the first probe

- Write the goal from the sample and change every bracket for this student.
- Give the baseline: three forms, three different days, before the first plotted point.
- Share the rotation (A, B, C, D) with anyone else who might give a form.

Giving and Scoring the Probe

The same way every week, so a change in the score is a change in the student.

Giving the probe

- Say: "Look at each triangle. One side is given. Find x and y. Write your answers in the boxes. Use a square root sign when you need one."
- Correct: both x and y are right. Your team decides whether partial credit counts (for example, one box right) and whether an answer written as a decimal counts. Write that rule on the goal page before the baseline.
- Note which kind of problem each miss falls on (the key names it): a leg given, the hypotenuse given, or a 30-60-90 side.
- Untimed. Let the student finish all eight.

What is on every form

- Two student pages, four problems a page, 8 problems in all.
- Four 45-45-90 triangles and four 30-60-90 triangles, in the same places on every form.
- One side is given; the student finds the other two, labeled x and y.
- No ratio reference is printed on a student form: the probe asks the student what they know. If the IEP allows a reference sheet, the teacher-reference page is the one to hand over.

45-45-90 triangles

Problems 1, 3, 5, 7 on every form. Both legs are the same length. A leg is given (problems 1 and 5) and the student finds the other leg and the hypotenuse, or the hypotenuse is given (problems 3 and 7) and the student finds both legs. Hypotenuses written with a root, like 6 root 2, always come out to a whole-number leg.

30-60-90 triangles

Problems 2, 4, 6, 8. The short leg is given (problems 2 and 8), the hypotenuse is given (problem 4) or the long leg is given (problem 6). The student finds the two missing sides. The hypotenuse of a 30-60-90 is always a whole number on these forms.

The answer boxes

Every problem has two boxes, x and y. An answer is a whole number or a whole number with a square root, such as 5 or 5 root 2. The roots on these forms are only root 2 and root 3. Each triangle shows its angles; the square in the corner marks the right angle.

Which side is which

The given side moves from problem to problem, so the student cannot learn a pattern of positions. Triangles are drawn both ways round. Every triangle is drawn on its own, never to scale.

If the student needs the problems read aloud, or other help

Follow the supports in the student's IEP, give them the same way each week, and write them on the goal page so the next person gives the probe the same way.

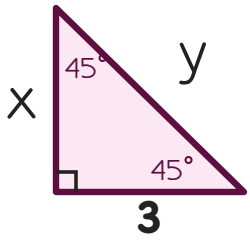
PREVIEW

My name: _____

Look. Find the missing sides. Write your answers.

Write answers like 5 or $5\sqrt{2}$ or $5\sqrt{3}$.

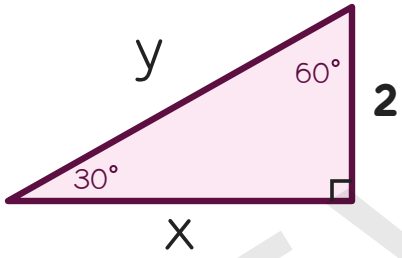
1 **Find** x **and** y.



x = _____

y = _____

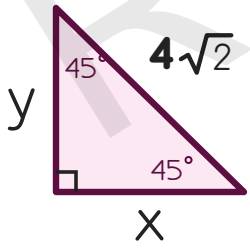
2 **Find** x **and** y.



x = _____

y = _____

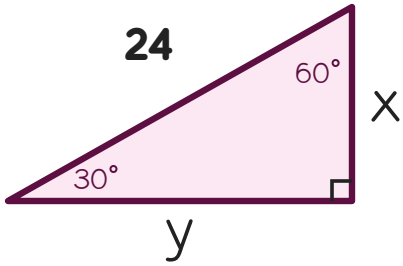
3 **Find** x **and** y.



x = _____

y = _____

4 **Find** x **and** y.



x = _____

y = _____

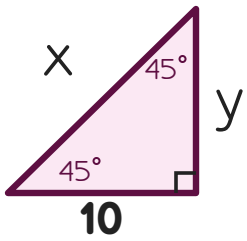
PREVIEW

My name: _____

Look. Find the missing sides. Write your answers.

Write answers like 5 or $5\sqrt{2}$ or $5\sqrt{3}$.

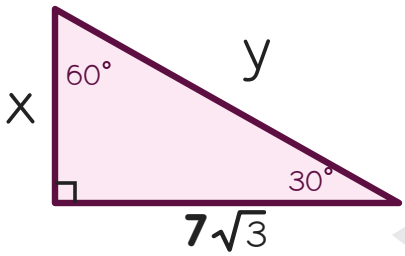
5 **Find** x **and** y.



x = _____

y = _____

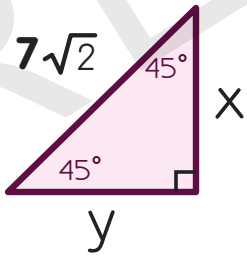
6 **Find** x **and** y.



x = _____

y = _____

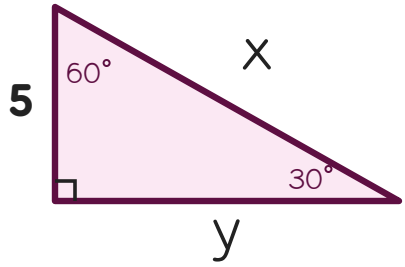
7 **Find** x **and** y.



x = _____

y = _____

8 **Find** x **and** y.



x = _____

y = _____

Color a star when you finish!

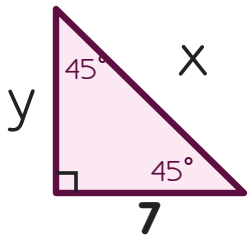
PREVIEW

My name: _____

Look. Find the missing sides. Write your answers.

Write answers like 5 or $5\sqrt{2}$ or $5\sqrt{3}$.

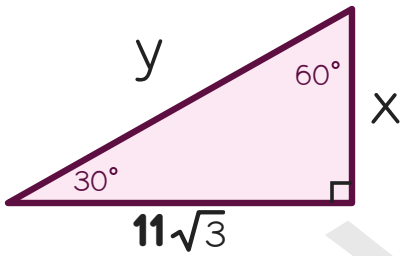
5 **Find** x **and** y.



x = _____

y = _____

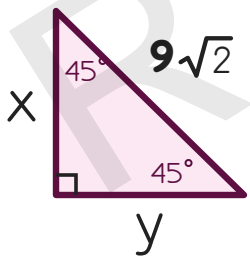
6 **Find** x **and** y.



x = _____

y = _____

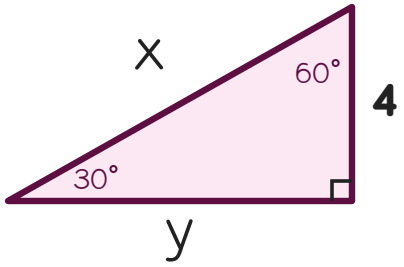
7 **Find** x **and** y.



x = _____

y = _____

8 **Find** x **and** y.



x = _____

y = _____

Color a star when you finish!

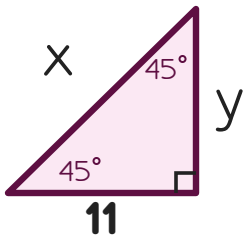
PREVIEW

My name: _____

Look. Find the missing sides. Write your answers.

Write answers like 5 or $5\sqrt{2}$ or $5\sqrt{3}$.

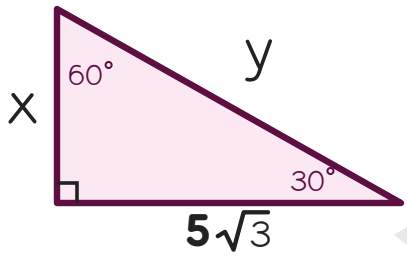
5 **Find** x **and** y.



x = _____

y = _____

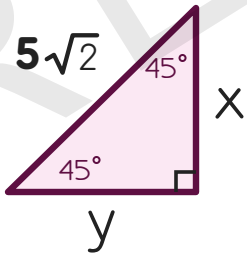
6 **Find** x **and** y.



x = _____

y = _____

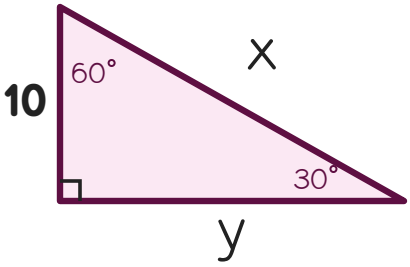
7 **Find** x **and** y.



x = _____

y = _____

8 **Find** x **and** y.



x = _____

y = _____

Color a star when you finish!

PREVIEW

Teacher Notes - Reading the Misses

Which kind of triangle is missed, and what the wrong answers look like, tells you what to teach next.

What this probe measures

- Whether a student can use the side ratios of a 45-45-90 and a 30-60-90 triangle to find the two missing sides when one side is given, and write the answers with a simple radical.
- It is a quick weekly check against a goal you write. It is not a norm-referenced test and carries no benchmark score.

Doubling instead of root 2

- On a 45-45-90 with a leg of 5, the hypotenuse is $5\sqrt{2}$. A student who writes 10 has used the 2 from the 30-60-90 triangle.
- Teach: in a 45-45-90 the two legs are equal and the hypotenuse is a leg times root 2. Ask: which triangle has two equal sides?

Putting root 3 on the wrong side

- On a 30-60-90 with a short leg of 4, the long leg is $4\sqrt{3}$ and the hypotenuse is 8. A student who writes $4\sqrt{3}$ for the hypotenuse has swapped the two.
- Teach: the hypotenuse is the longest side and is twice the short leg. The root 3 goes on the long leg, across from the 60 degree angle.

Going from the hypotenuse back to a leg

- With a 45-45-90 hypotenuse of $6\sqrt{2}$ each leg is 6, not $6\sqrt{2}$ and not $3\sqrt{2}$. These problems ask the student to undo the root 2.
- On a 30-60-90 the same idea is halving: a hypotenuse of 14 means a short leg of 7. A long leg of $6\sqrt{3}$ means a short leg of 6.

Misses that cluster on one kind of problem

- The 45-45-90 triangles are problems 1, 3, 5, 7 and the 30-60-90 triangles are problems 2, 4, 6, 8. These positions are the same on all four forms.
- Several misses on one family across two forms: teach that family with a worked example before more probes.
- Look at the two boxes separately: one right and one wrong usually means one ratio is known and the other is not.

Writing the answer

- A decimal is not asked for. Write your team's rule on the goal page.

The student cannot start

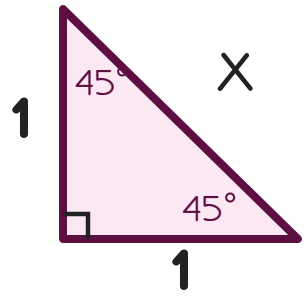
- Do the first problem together, aloud, and let the student do the second. Fade the help and write what you changed on the log.

PREVIEW

My name: _____

Warm up. Write what you notice about the sides.

A. 45-45-90



The legs are 1 and 1. The hypotenuse x is:

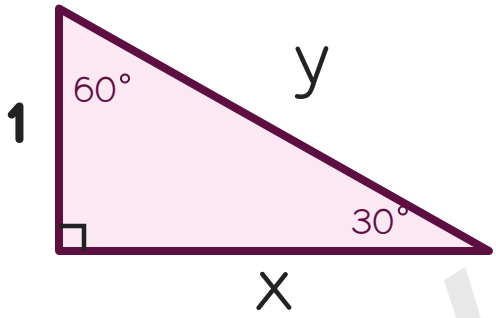
x = _____

The legs are n and n. The hypotenuse is:

hyp = _____

What I notice

B. 30-60-90



The short leg is 1. The long leg x and the hypotenuse y are:

x = _____

y = _____

The short leg is n. The long leg and the hypotenuse are:

long = _____

hyp = _____

What I notice

PREVIEW

Special Right Triangles - Caseload Summary

Every student on this goal, on one grid. Eleven rows, eight probes, one decision column.

Teacher / case manager _____ Skill _____ Marking period _____

Student	Base	Crit	P1	P2	P3	P4	P5	P6	P7	P8	Trend	Decision

How to fill it

- One row per student on this skill. Baseline is the median of the first three probes.
- One column per weekly probe; write the score out of 8, not a percent.
- Trend: up, flat or down over the last four probes.
- Decision: keep going, change the teaching, or raise the target.
- Leave a cell blank rather than guess; a gap is more honest than a filled-in score.

What it is for

Grouping. Rows that are flat together are a group; a row that is flat alone is a different question. Take this page to the data meeting instead of ten folders.

PREVIEW

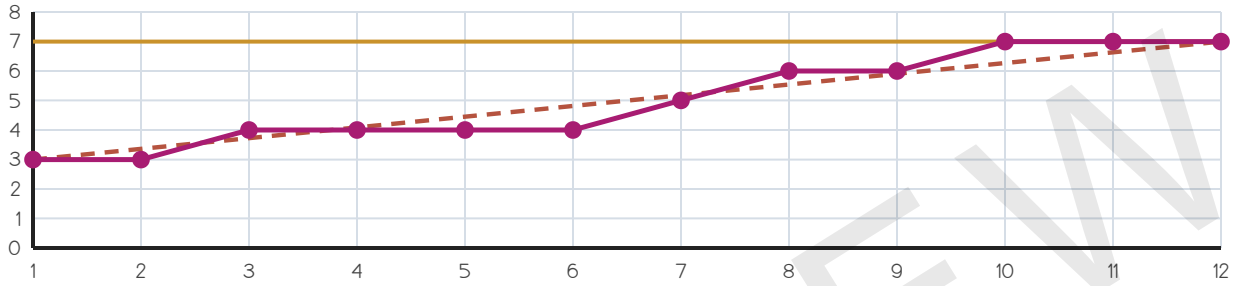
A Filled-In Data Log (Invented Student)

Marcus is invented. Twelve weekly probes, the aim line, the change three low points forced, and the criterion being met.

The goal, as written for Marcus, ninth grade (invented)

By November 20, when given 8 special right triangle problems (45-45-90 and 30-60-90, one side given, two sides missing), Marcus will find both missing sides, in radical form when needed, on 7 of 8 problems on 3 consecutive weekly probes, as measured by teacher-scored special right triangles probes (forms A–D).

Marcus's graph (invented): dots are the weekly scores, dashed is the aim line, gold is the criterion of 7



#	Date	Form	Correct	Errors	Graphed	Notes
1	9/8	A	3	5	3	baseline
2	9/9	B	3	5	3	baseline
3	9/10	C	4	4	4	baseline (median of 3, 3, 4 = 3)
4	9/17	D	4	4	4	doubles the leg for the hypotenuse of a 45-45-90
5	9/24	A	4	4	4	same: doubles the leg
6	10/1	B	4	4	4	3 under the aim line: reteach with the ratio card
7	10/8	C	5	3	5	hypotenuse = leg times root 2
8	10/15	D	6	2	6	30-60-90: finds the short leg first
9	10/22	A	6	2	6	puts the root 3 on the hypotenuse
10	10/29	B	7	1	7	criterion score, first time
11	11/5	C	7	1	7	second in a row at 7
12	11/12	D	7	1	7	third in a row: goal met

How to read the log

- Baseline was the median of three forms on three days: 3, 3, 4, so 3. Not the average, not the best.
- The aim line runs from 3 at probe 1 to 7 at probe 12. Probes 4, 5 and 6 (4, 4, 4) sat under it: three in a row, so the teaching changed and the change is written on the row.
- The notes name what the misses looked like: Marcus doubled the leg to get the hypotenuse of a 45-45-90. A score alone would not have said that.
- Criterion was met on probes 10, 11 and 12 (7, 7, 7): three in a row at 7 of 8 or better.

The progress report sentence this log produces

On weekly special right triangles probes (8 problems, untimed), Marcus scored 3 of 8 at baseline and 7, 7 and 7 of 8 on the last three probes, meeting the criterion of 7 of 8 on 3 consecutive probes.

PREVIEW