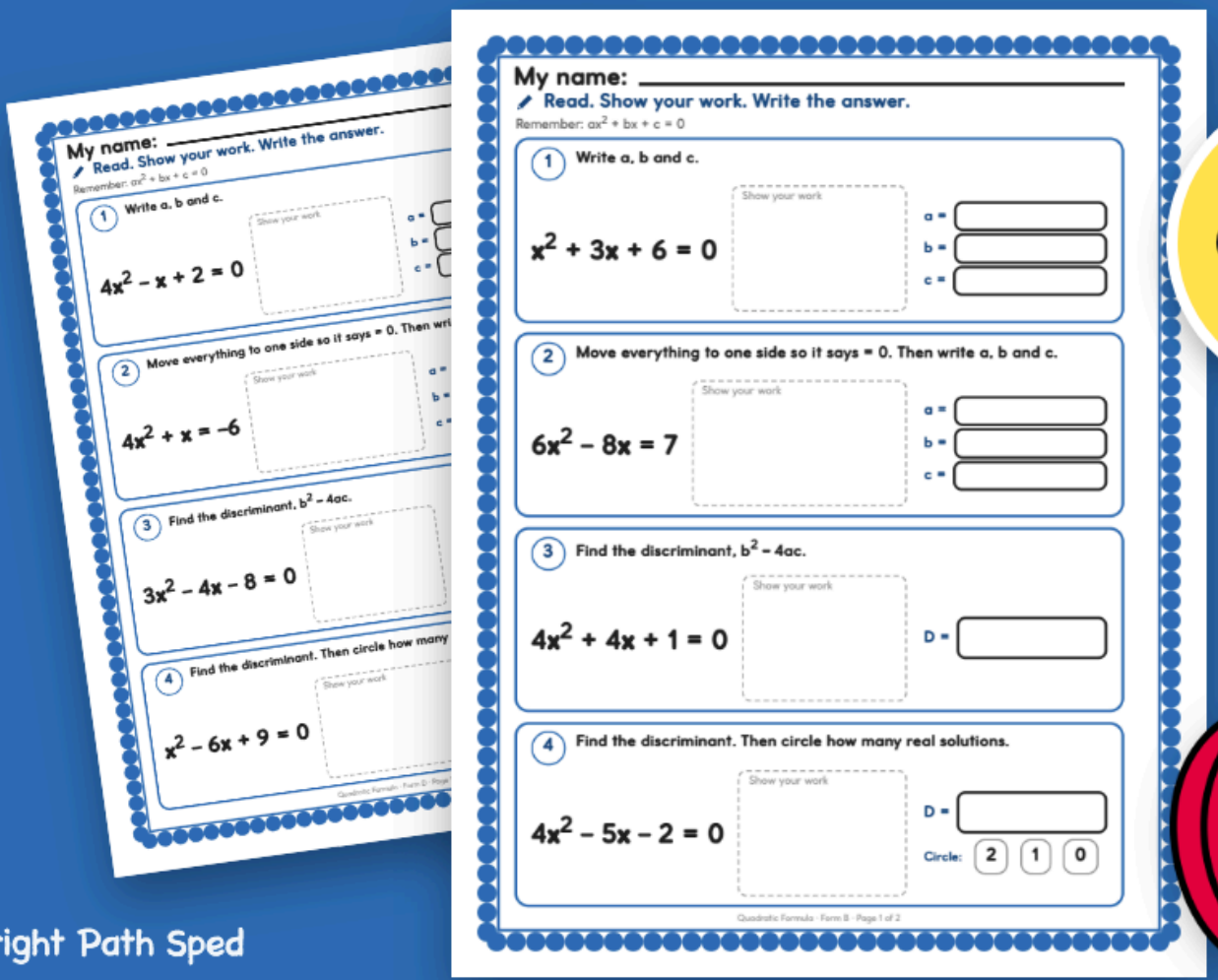
QUADRATIC FORMULA

PROGRESS MONITORING PROBES



GR. 8-10



Bright Path Sped

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One classroom license

- This file is for one classroom: one teacher, one caseload.
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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

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–F fit.

03 Probe Forms
The 6 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.

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, E, F) with anyone else who might give a form.

PREVIEW

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: "Read each problem. Show your work in the box. Write your answers in the answer boxes."
- Correct: every answer box on the problem is right. Problems 3 and 8 have one answer; every other problem has two or three, and is right only when all of them are. Your team decides whether partial credit counts and whether the work box is scored. Write that rule on the line below before the baseline.
- Note which kind of problem each miss falls on (the key marks it): identify, discriminant, solve or check.
- Time: your team decides whether the probe is timed. If it is, write the limit on the line below; if not, let the student finish all eight.

What is on every form

- Two student pages, four problems a page, 8 problems in all.
- Two identify, two discriminant, two solve and two check problems, in the same places on every form.
- The formula is not printed on the student pages. If the IEP allows a formula sheet, page 22 can be that sheet.

Identify

Problems 1, 2 on every form. The student writes a, b and c with their signs. Problem 2 shows the equation not yet set equal to 0, so the student moves terms first.

Discriminant

Problems 3, 4. The student finds $b^2 - 4ac$; problem 4 also asks how many real solutions there are (2, 1 or 0).

Solve

Problems 5, 6. The student finds D, then both solutions with the quadratic formula. Every solution is a whole number. Problem 6 has a leading number other than 1.

Check

Problems 7, 8. The student plugs a value into the equation. Problem 7 gives one value and asks YES or NO; problem 8 gives two values and asks which one is a solution.

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.

Notes for whoever gives the probe next (supports, any time limit)

PREVIEW

Preview - Bright Path Shed

My name: _____

Read. Show your work. Write the answer.

Remember: $ax^2 + bx + c = 0$

1 **Write a, b and c.**

$3x^2 + 8x + 2 = 0$

Show your work

a = ☐

b = ☐

c = ☐

2 **Move everything to one side so it says = 0. Then write a, b and c.**

$3x^2 = 2x + 7$

Show your work

a = ☐

b = ☐

c = ☐

3 **Find the discriminant, $b^2 - 4ac$.**

$2x^2 - 5x - 1 = 0$

Show your work

D = ☐

4 **Find the discriminant. Then circle how many real solutions.**

$2x^2 + 4x + 5 = 0$

Show your work

D = ☐

Circle: 2 1 0

PREVIEW

Preview - Bright Path Shed

My name: _____

Read. Show your work. Write the answer.

Remember: $ax^2 + bx + c = 0$

1 **Write a, b and c.**

$x^2 + 3x + 6 = 0$

Show your work

a = ____

b = ____

c = ____

2 **Move everything to one side so it says = 0. Then write a, b and c.**

$6x^2 - 8x = 7$

Show your work

a = ____

b = ____

c = ____

3 **Find the discriminant, $b^2 - 4ac$.**

$4x^2 + 4x + 1 = 0$

Show your work

D = ____

4 **Find the discriminant. Then circle how many real solutions.**

$4x^2 - 5x - 2 = 0$

Show your work

D = ____

Circle: 2 1 0

PREVIEW

Preview · Bright Path Sped

My name: _____

Read. Show your work. Write the answer.

Remember: $ax^2 + bx + c = 0$

5 Solve with the quadratic formula. Find D first.

$x^2 - 11x + 28 = 0$

Show your work

D = _____

x = _____

x = _____

6 Solve with the quadratic formula. Find D first.

$-x^2 + 10x - 21 = 0$

Show your work

D = _____

x = _____

x = _____

7 Is x = –3 a solution? Plug it in. Write the result. Circle YES or NO.

$x^2 + 4x + 3 = 0$

Show your work

Result = _____

Circle: YES NO

8 Plug in each value. Circle the one that is a solution.

$x^2 + 5x + 6 = 0$

Show your work

Circle: x = –5

x = –3

Color a star when you finish!

PREVIEW

Preview - Bright Path Sped

My name: _____

Read. Show your work. Write the answer.

Remember: $ax^2 + bx + c = 0$

5 Solve with the quadratic formula. Find D first.

$x^2 - 16 = 0$

Show your work

D = _____

x = _____

x = _____

6 Solve with the quadratic formula. Find D first.

$3x^2 - 24x + 21 = 0$

Show your work

D = _____

x = _____

x = _____

7 Is x = –1 a solution? Plug it in. Write the result. Circle YES or NO.

$x^2 + 3x - 4 = 0$

Show your work

Result = _____

Circle: YES NO

8 Plug in each value. Circle the one that is a solution.

$x^2 - 3x - 18 = 0$

Show your work

Circle: x = –3

x = –5

Color a star when you finish!

PREVIEW

Preview - Bright Path Shed

My name: _____

Read. Show your work. Write the answer.

Remember: $ax^2 + bx + c = 0$

5 Solve with the quadratic formula. Find D first.

$x^2 + 4x - 21 = 0$

Show your work

D = _____

x = _____

x = _____

6 Solve with the quadratic formula. Find D first.

$2x^2 + 12x - 14 = 0$

Show your work

D = _____

x = _____

x = _____

7 Is x = –6 a solution? Plug it in. Write the result. Circle YES or NO.

$2x^2 + 8x - 24 = 0$

Show your work

Result = _____

Circle: YES NO

8 Plug in each value. Circle the one that is a solution.

$x^2 - 10x + 24 = 0$

Show your work

Circle: x = 1

x = 4

Color a star when you finish!

PREVIEW

Preview - Bright Path Sped

My name: _____

Read. Show your work. Write the answer.

Remember: $ax^2 + bx + c = 0$

5 Solve with the quadratic formula. Find D first.

$x^2 - 8x + 7 = 0$

Show your work

D = _____

x = _____

x = _____

6 Solve with the quadratic formula. Find D first.

$2x^2 - 32 = 0$

Show your work

D = _____

x = _____

x = _____

7 Is x = –5 a solution? Plug it in. Write the result. Circle YES or NO.

$x^2 + 2x - 3 = 0$

Show your work

Result = _____

Circle: YES NO

8 Plug in each value. Circle the one that is a solution.

$2x^2 - 8x - 24 = 0$

Show your work

Circle: x = 6 x = 8

Color a star when you finish!

PREVIEW

Teacher Notes - Reading the Misses

Which kind of problem is missed, and what the work box shows, tells you what to teach next.

What this probe measures

- Whether a student can read a, b and c from a quadratic equation, find the discriminant, solve with the quadratic formula and check a solution by plugging it in.
- It is a quick weekly check against a goal you write. It is not a norm-referenced test and carries no benchmark score.

The sign of b or c is lost

- The student writes b = 5 for $3x^2 - 5x + 2 = 0$, or does not flip the signs when moving terms across the equals sign.
- Teach the habit of circling the sign with the number before any arithmetic. Problem 2 on every form is there for this.

Discriminant arithmetic

- $(-5)^2$ written as -25, or 4ac done with the wrong sign when c is negative.
- Have the student write b^2 and 4ac on two lines, then subtract. Run the next form.

Misses that cluster on one kind of problem

- Identify are problems 1, 2; discriminant 3, 4; solve 5, 6; check 7, 8. These positions are the same on all six forms.
- Several misses on one kind across two forms: teach that kind with a worked example before more probes.
- Solve problems missed with a right D: look at the divide by 2a (only the root divided) or at the second root (the minus half of the plus-or-minus).

Step-by-step page (page 23): what the two panels show

- Panel A is $x^2 - 7x + 10 = 0$: a = 1, b = −7, c = 10, D = 9, square root 3, solutions 2 and 5.
- Panel B is $2x^2 - 2x - 12 = 0$: a = 2, b = −2, c = −12, D = 100, square root 10, solutions −2 and 3.

The student cannot start

- Do the first problem together, aloud, and let the student do the second.
- Use the step-by-step page for the first few weeks; fade it and write what you changed on the log.

This student's scoring rules and notes

PREVIEW

Preview - Bright Path Sped

My name: _____

Fill in each step.

A. Solve $x^2 - 7x + 10 = 0$

Step 1: write a, b and c

a = ☐

b = ☐

c = ☐

Step 2: find D

D = ☐

Step 3: square root of D

square root of D = ☐

Step 4: two solutions

x = ☐

x = ☐

Step 5: plug one answer back in. Result =

☐

B. Solve $2x^2 - 2x - 12 = 0$

Step 1: write a, b and c

a = ☐

b = ☐

c = ☐

Step 2: find D

D = ☐

Step 3: square root of D

square root of D = ☐

Step 4: two solutions

x = ☐

x = ☐

Step 5: plug one answer back in. Result =

☐

PREVIEW

Quadratic Formula - 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

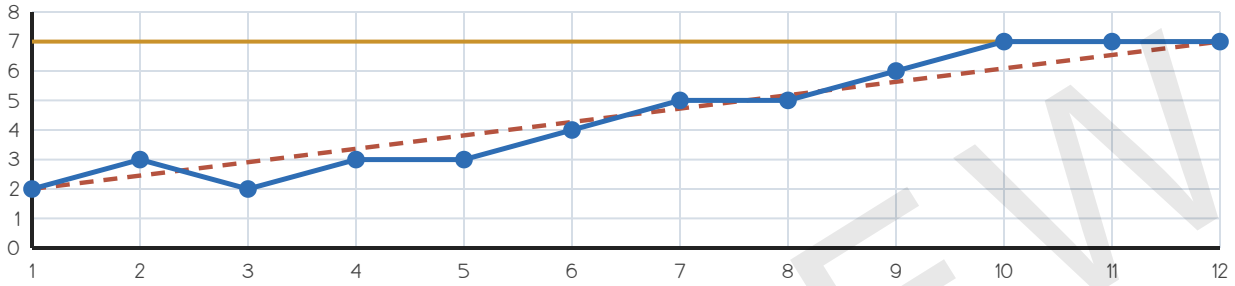
A Filled-In Data Log (Invented Student)

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

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

By November 20, when given 8 quadratic formula problems (identify a, b and c; discriminant; solve; check), Jordan will answer 7 of 8 problems correctly on 3 consecutive weekly probes, as measured by teacher-scored quadratic formula probes (forms A–F).

Jordan'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	2	6	2	baseline
2	9/9	B	3	5	3	baseline
3	9/10	C	2	6	2	baseline (median of 2, 3, 2 = 2)
4	9/17	D	3	5	3	dropped the minus on b
5	9/24	E	3	5	3	same: sign of b lost
6	10/1	F	4	4	4	3 under the aim line: added a sign check on step 1
7	10/8	A	5	3	5	writes a, b, c first on every problem
8	10/15	B	5	3	5	discriminant right on both problems
9	10/22	C	6	2	6	second root slips on solve
10	10/29	D	7	1	7	criterion score, first time
11	11/5	E	7	1	7	second in a row at 7
12	11/12	F	7	1	7	third in a row: goal met

How to read the log

- Baseline was the median of three forms on three days: 2, 3, 2, so 2. Not the average, not the best.
- The aim line runs from 2 at probe 1 to 7 at probe 12. Probes 4, 5 and 6 (3, 3, 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: the minus sign on b was lost before the formula started. 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 quadratic formula probes (8 problems), Jordan scored 2 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