TEACHER COPY · READ FIRST

Terrain Park Functions on paper · Grade 9

Two printable rides that match the online game: Ride 1 is the course's six stops; Ride 2 is the fresh check with new numbers. No device or account needed.

What is inside

Pages	For	What
This page	Teacher	How to run, score and choose a next step
Rides 1–2 (separate PDF)	Students	Six stops each, with selected graphs and diagrams from the game. Most stops have two or three parts.
Answer key	Teacher	Answer, the game's clue, a worked answer, and what common wrong answers usually mean
Record sheet	Teacher	First answers and fixes, one row per student per ride

Run one ride (30–45 minutes)

1. Copy Ride 1 for each student. A calculator is allowed.
2. Check each stop. After a first miss, read the **clue** from the key aloud and let the student try once more. They keep the first answer and write the new one with a star (★), as in the online game.
3. After a second miss, go through the **worked answer** together.
4. Give Ride 2 another day as the fresh check: new numbers, one try, no clue.

Count and choose a next step

Record each part separately. Count **first answers**; fixes with a star are shown but counted apart. Some later parts are scored against the student's own earlier choice (the key says which), as the game does. There is no cut score.

What you see	A next step
Fixed after the clue (★)	Ask what the clue made them notice; check the same stop on Ride 2.
Missed twice	Work the answer together, then give the Ride 2 version of that stop.
The same wrong-answer note keeps repeating	Teach to that error (for example, forgetting the starting value, or adding the speeds when the riders move the same way).
Part A right, Part B wrong	The setup is solid; talk through how Part B uses it.

Stops and standards · Grade 9

Stop	Standard	Task
1. Chairlift	F.LE.2	Model the chairlift
2. Groomed Run	A.CED.1 · A.REI.3	Find where the trail crosses the lift line
3. Rail	A.CED.2	Line up with the rail
4. Big Jump	F.IF.7a	Read the flight
5. Halfpipe	F.IF.7a	Find the matching height
6. Two-Rider Bonus	A.REI.6	Find where the riders meet

Same questions as the online game. A student who played online may have seen them. Original practice from Pole Mountain Learning, informed by published mathematics expectations. It is not an official Pearson, NAVVY or WY-TOPP assessment and does not use their test questions. Results are practice notes, not grades, and do not predict test scores or establish mastery. Built and reviewed with AI tools; no human classroom trial of this revision yet. Free for classroom use. November 2026 edition.

TEACHER ANSWER KEY · KEEP SEPARATE FROM STUDENT COPIES

Answer key · Grade 9

Ride 1: the six stops

#	Stop · standard	Answer	Clue (after a first miss) and worked answer	Common wrong answers
1A	**Chairlift** F.LE.2	**h = 24t + 1420** any equivalent form, e.g. h = 1420 + 24t	**Clue:** in the table, find how much the elevation changes for each minute. The elevation at t = 0 is where the equation starts. **Worked:** The lift gains 48 m in 2 minutes, so it climbs 24 m each minute. At t = 0 it is already at 1,420 m.	**h = 48t + 1420**: used the change per 2-minute step, not per minute.
1B		**8 min**	**Worked:** The chair needs to gain 192 m. At 24 m per minute, that takes 8 minutes.	**4**: used the per-step change. **67.17**: forgot the starting elevation.
2A	**Groomed Run** A.CED.1 · A.REI.3	**A**: 1840 − 0.2x = 1813	**Clue:** write the elevation after x meters as start − drop per meter × x, set it equal to the lift-line elevation, then solve for x. **Worked:** After x horizontal meters, the rider's elevation is 1840 − 0.2x. Set it equal to 1813, the elevation of the crossing. The rider has to drop 27 m. Divide 27 by 0.2 to get 135 horizontal meters.	**B** (1840 + 0.2x = 1813): adds the drop; elevation goes down. **C** (0.2x = 1813): uses the drop as if it were the elevation. **D** (1840 − x = 1813): treats the drop as 1 m per meter.
2B		**135 m**	**Worked:** 1840 − 0.2x = 1813; −0.2x = −27; x = 135.	**27**: the elevation change, not yet divided. **5.4**: multiplied instead of dividing. **−135**: sign error.
3	**Rail** A.CED.2	**y = −0.5x + 9** any equivalent form, including point-slope Two checks, as in the game: slope matches the rail (−0.5) and passes through the first marked point (2, 8). Both = the full line.	**Clue:** slope = change in y ÷ change in x between the two points. Then put one point into y = mx + b to find b. **Worked:** From (2, 8) to (8, 5), y decreases by 3 while x increases by 6. The slope is −0.5. Substitute either point into y = −0.5x + b to get b = 9.	**slope 0.5**: sign flipped. **slope −2**: change in x over change in y. Right slope, wrong b: substituted a point incorrectly.
4A	**Big Jump** F.IF.7a	**B**: y = x(10 − x)/4	**Clue:** The board leaves at the first zero, x = 0. It lands when the height returns to zero. The highest point is halfway between the zeros. Substitute that distance into the equation to find the height. **Worked:** Flight B lands at 10 m, inside the 9–11 m zone.	**A**: lands at 8 m. **C**: lands at 12 m.
4B		**10 m** for B Scored against the flight the student chose: A = 8, B = 10, C = 12	**Worked:** The landing is the positive zero of y = x(r − x)/d: x = 10.	**5**: where the maximum is, not the landing. **0**: the launch zero.
4C		**6.25 m** for B Scored against the chosen flight: A = 4, B = 6.25, C = 6	**Worked:** The maximum is halfway between the zeros, at x = 5; substitute to get 6.25 m.	**5**: the x of the maximum, not its height. **10**: the landing distance. **25**: forgot to divide by 4.

#	Stop · standard	Answer	Clue (after a first miss) and worked answer	Common wrong answers
5	**Halfpipe** F.IF.7a	**x = 5**	**Clue:** a parabola is symmetric about its axis. Points the same distance on each side of the axis are at the same height. **Worked:** The axis is x = 1. The starting point is 4 m to its left, so the point at the same height is 4 m to its right, at x = 5.	**3**: reflects across x = 0. **6**: goes past the matching point.
6A	**Two-Rider Bonus** A.REI.6	**8 s**	**Clue:** two riders are side by side when their positions are equal. Set the two expressions equal, solve for t, then substitute t to find d. **Worked:** The riders are side by side when their positions are equal. Set 6t = 24 + 3t. Then 3t = 24, so t = 8 s. Substituting gives 48 m.	**2.7 s**: adds the two speeds (gap ÷ sum of the speeds, rounded).
6B		**48 m**	**Worked:** Substitute the time into either equation; both give the same position.	**16.2 m**: adds the two speeds (from the rounded time 2.7 s). **24 m**: used Eli's 3 m/s for 8 s but left out the 24 m start.

Ride 2: fresh check (one try, no clue)

#	Stop · standard	Answer	Worked answer	Common wrong answers
1A	**Chairlift** F.LE.2	**h = 18t + 1530** any equivalent form, e.g. h = 1530 + 18t	**Worked:** The lift gains 54 m in 3 minutes, so it climbs 18 m each minute. Its starting elevation is 1,530 m.	**h = 54t + 1530**: used the change per 3-minute step, not per minute.
1B		**12 min**	**Worked:** The chair needs to gain 216 m. At 18 m per minute, that takes 12 minutes.	**4**: used the per-step change. **97**: forgot the starting elevation.
2A	**Groomed Run** A.CED.1 · A.REI.3	**C**: 1920 − 0.22x = 1887	**Worked:** After x horizontal meters, the rider's elevation is 1920 − 0.22x. Set it equal to 1887. The rider has to drop 33 m. Divide 33 by 0.22 to get 150 horizontal meters.	**A** (1920 + 0.22x = 1887): adds the drop; elevation goes down. **B** (0.22x = 1887): uses the drop as if it were the elevation. **D** (1920 − x = 1887): treats the drop as 1 m per meter.
2B		**150 m**	**Worked:** 1920 − 0.22x = 1887; −0.22x = −33; x = 150.	**33**: the elevation change, not yet divided. **7.26**: multiplied instead of dividing. **−150**: sign error.
3	**Rail** A.CED.2	**y = −0.75x + 9.75** any equivalent form, including point-slope Two checks, as in the game: slope matches the rail (−0.75) and passes through the first marked point (1, 9). Both = the full line.	**Worked:** From (1, 9) to (9, 3), y decreases by 6 while x increases by 8. The slope is −0.75. Substituting (1, 9) gives b = 9.75.	**slope 0.75**: sign flipped. **slope −1.33**: change in x over change in y. Right slope, wrong b: substituted a point incorrectly.

#	Stop · standard	Answer	Worked answer	Common wrong answers
4A	**Big Jump** F.IF.7a	**A**: $y = x(12 - x)/4.5$	**Worked:** Flight A lands at 12 m, inside the 11–13 m zone.	**B**: lands at 10 m. **C**: lands at 14 m.
4B		**12 m** for A Scored against the flight the student chose: A = 12, B = 10, C = 14	**Worked:** The landing is the positive zero of $y = x(r - x)/d$: $x = 12$.	**6**: where the maximum is, not the landing. **0**: the launch zero.
4C		**8 m** for A Scored against the chosen flight: A = 8, B = 5, C = 7	**Worked:** The maximum is halfway between the zeros, at $x = 6$; substitute to get 8 m.	**6**: the x of the maximum, not its height. **12**: the landing distance. **36**: forgot to divide by 4.5.
5	**Halfpipe** F.IF.7a	**$x = 2$**	**Worked:** The axis is $x = -1$. The starting point is 3 m to its left, so move 3 m to the right of −1. The matching point is $x = 2$.	**4**: reflects across $x = 0$. **−1**: stops at the axis.
6A	**Two-Rider Bonus** A.REI.6	**9 s**	**Worked:** Set $4 + 7t$ and $31 + 4t$ equal. The initial gap is 27 m and it closes at 3 m/s, so $t = 9$ s. Substituting gives 67 m.	**2.5 s**: adds the two speeds (gap ÷ sum of the speeds, rounded).
6B		**67 m**	**Worked:** Substitute the time into either equation; both give the same position.	**21.5 m**: adds the two speeds (from the rounded time 2.5 s). **63 m**: used Maya's 7 m/s for 9 s but left out the 4 m start.

TEACHER COPY · CLASS RECORD SHEET

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Use initials or class codes only. One row per student per ride. Copy this page for more students.

Student (initials or code)	Ride #	1. Chairlift A B	2. Groomed Run A B	3. Rail slope · point	4. Big Jump A B C	5. Halfpipe	6. Two-Rider Bonus A B	Next step / notes

For each part write ✓ if the FIRST answer was right, or ★ if the student fixed it after the clue (for example "A✓ B★"). Leave it blank if it was still missed. Count only ✓ as first answers, as the online game does.