ASPIRE TO POWER LEARNING

Year 8 | Algebra

Linear graphs equations and inequalities

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A sample from this topic. The complete topic collection contains three different resources and worked solutions.

Read the explanation and worked example. Show your working; use a calculator only where asked.

What you will practise

• Connect linear rules, graphs, equations and inequalities.

• Explain a method and check the reasonableness of a result.

Useful starting skills: Use the prerequisite operations and representations shown in the worked example.

For $y=mx+c$, m is the rise for each step right and c is the y-intercept. A table of equally spaced x values has constant first differences for a linear rule.

Solve an equation by balancing operations. An inequality gives a range; multiplying or dividing by a negative reverses the inequality sign. Graphing software can test conjectures about slope and intercept.

Worked example

Solve $2x+3\leq 11$ and describe its number-line graph.

Subtract 3, then divide by 2.

$x\leq 4$; fill the point 4 and shade left.

Answer: $x\leq 4$

Try it yourself

Name: _____ Date: _____

1. List points on y=2x-1 for x=0,1,2.

2. Solve 3x+4=19.

Answers and explanations

Check the method as well as the final answer. An alternative correct method is also valid.

1. (0, -1), (1,1), (2,3)

Substitute into the rule.

2. x=5

Subtract 4, divide 3.

Curriculum reference: VC2M8A02; VC2M8A05

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