Grade 6
Subject Bulletin
Mathematics

Alberta Provincial Achievement Testing 2021–2022
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You can find provincial achievement test-related materials on the Alberta Education website. Additional topics of interest are found in the General Information Bulletin.
Grade 6 Mathematics Provincial Achievement Test

General description

The Grade 6 Mathematics Provincial Achievement Test consists of two parts:

- **Part A** consists of 15 numerical-response questions. There are seven addition/subtraction questions and eight multiplication/division questions. The format of the questions is numerical-response, which requires students to generate a response without the use of calculators (in symbolic form) to a particular problem, rather than selecting a response from a list of four options. Each response will consist of a maximum of four digits or, if a decimal point occurs in the answer, three digits. Examples of these questions are provided in Appendix 2.

- **Part B** consists of 40 multiple-choice questions that provide students with four response options, of which only one is correct. Examples of these questions are provided in Appendix 3.

Questions are categorized according to three levels of complexity: low, moderate, and high. (See Appendix 1 for a more detailed explanation of each complexity level.)

A dictionary, a thesaurus, or other reference materials are not permitted for students writing the test.

Test administration

The Grade 6 Mathematics Provincial Achievement Test Part A and Part B can be written digitally by submitting a request to use the Quest A+ online test system.

Students can take a break between the writing of parts A and B. Students may also write the parts in any order and on separate days according to the schedule set by the school authority.

**Part A** is designed to be completed in 20 minutes; however, each student may have up to 40 minutes to complete this part, should they need it.

**Part B** is designed to be completed in 70 minutes; however, each student may have up to 140 minutes to complete this part, should they need it.
Description of Grade 6 Mathematics provincial assessment standards

The following statements describe what is expected of Grade 6 students at the acceptable standard and the standard of excellence, based on outcomes in the Grade 6 Mathematics Program of Studies. These statements represent examples of the standards against which student achievement is measured. It is important to remember that one test cannot measure all the outcomes in the Grade 6 Mathematics Program of Studies.

<table>
<thead>
<tr>
<th>Acceptable standard</th>
<th>Standard of excellence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students who meet the acceptable standard in Grade 6 Mathematics are typically able to</td>
<td>Students who meet the standard of excellence in Grade 6 Mathematics are typically able to</td>
</tr>
<tr>
<td>• recall and apply a moderate number of mathematical properties to solve routine problems</td>
<td>• recall and apply a variety of mathematical properties to solve novel problems</td>
</tr>
<tr>
<td>• use familiar problem-solving strategies to solve routine problems</td>
<td>• use a variety of problem-solving strategies to solve novel problems</td>
</tr>
<tr>
<td>• connect and apply personal experiences and problem-solving strategies to solve routine problems</td>
<td>• connect and apply personal experiences and strategies to check and verify solutions to novel problems</td>
</tr>
<tr>
<td>• recall and apply mathematical concepts and operational terms to solve routine problems</td>
<td>• apply abstract-thinking skills to reframe mathematical concepts to solve novel problems</td>
</tr>
<tr>
<td>• apply computation skills and formal mathematics vocabularies to solve routine problems</td>
<td>• generate linguistic and non-linguistic representations of knowledge to solve novel problems</td>
</tr>
<tr>
<td>• recognize and describe numerical and non-numerical patterns</td>
<td>• demonstrate fluency in working with patterns represented concretely, pictorially, or symbolically</td>
</tr>
<tr>
<td>• use semantic knowledge to construct correct mental representations of word problems</td>
<td>• use semantic knowledge to construct and reframe correct mental representations of word problems</td>
</tr>
<tr>
<td>• use logical processes to analyze and solve routine problems</td>
<td>• use logical processes to analyze complex problems, reach conclusions, and justify or defend conclusions</td>
</tr>
<tr>
<td>• recognize and use mathematical patterns to make predictions when solving routine problems</td>
<td>• recognize, extend, create, and use mathematical patterns to make and justify predictions when solving novel problems</td>
</tr>
<tr>
<td>• test generalizations from patterns to reach conclusions</td>
<td>• make generalizations from patterns to reach conclusions</td>
</tr>
</tbody>
</table>
Use of calculators and manipulatives

Part A: Manipulatives may be used, but use of a calculator is not permitted.

Part B: Manipulatives and a calculator may be used; however, a scientific or graphing calculator is not permitted. In addition to the four standard mathematical functions of addition (+), subtraction (−), multiplication (×), and division (÷), a calculator is also permitted to have the following functions:

- percentage (%)
- square root (√)
- sign change (+/−)
- simple memory (M+, M−, MC, MR)

An acceptable manipulative is any mathematical tool that can be used by a student to help convert abstract ideas into concrete representations for the purpose of solving a problem (e.g., a protractor, a ruler, tracing paper, pattern blocks, tiles and cubes, geoboards, tangrams, counters, spinners, number lines). The manipulative cannot perform the mental conversion or provide the solution to a problem. A multiplication table is not an acceptable manipulative for use in completing Part A (except as an accommodation) or Part B.

Scoring and reporting

Marking keys will be provided to teachers for marking purposes. Teachers are expected to record and report the raw scores achieved on the test by their students to parents. Raw scores achieved by students on Part A and Part B are to be reported separately to parents and are not to be combined into a total test score.
## Blueprints

<table>
<thead>
<tr>
<th>Test Component</th>
<th>Number of Questions</th>
<th>Question Format</th>
<th>Weighting on Total Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part A</td>
<td>15</td>
<td>Numerical Response</td>
<td>10%</td>
</tr>
<tr>
<td>Part B</td>
<td>40</td>
<td>Multiple Choice</td>
<td>90%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Content Domain of Test (Strand)</th>
<th>Part A: Percentage of Questions</th>
<th>Part B: Percentage of Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>100%</td>
<td>25–35%</td>
</tr>
<tr>
<td>Pattern</td>
<td></td>
<td>20–30%</td>
</tr>
<tr>
<td>Shape and Space</td>
<td></td>
<td>20–30%</td>
</tr>
<tr>
<td>Statistics and Probability</td>
<td></td>
<td>10–20%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cognitive Domain of Test (Complexity Level)</th>
<th>Part A: Percentage of Questions</th>
<th>Part B: Percentage of Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>100%</td>
<td>30–40%</td>
</tr>
<tr>
<td>Moderate</td>
<td></td>
<td>40–50%</td>
</tr>
<tr>
<td>High</td>
<td></td>
<td>15–25%</td>
</tr>
</tbody>
</table>
Preparing Students for the Grade 6 Mathematics Provincial Achievement Test

Suggestions for preparing students

The best way to prepare students for writing the provincial achievement test is to teach the Mathematics Program of Studies well and to ensure that students know what is expected. Many of the skills and attitudes that support test writing are, in fact, good skills and strategies for approaching all kinds of learning tasks.

Note that most of the questions on the mathematics test are placed in real-life contexts.

Teachers are encouraged to familiarize their students with the types of questions that will appear on the test. Released materials from previously secured tests are available on the Alberta Education website.

Teachers are also encouraged to share the following information with their students to help them prepare for the Grade 6 Mathematics Provincial Achievement Test.

Special-format practice tests

To give students an opportunity to practise provincial achievement test-style questions and content in Braille, audio, large print, or coloured print versions, Alberta Education produces special-format practice tests for all subjects that have a provincial achievement test. Alberta schools with registered Alberta K–12 students may place orders for these tests. Braille versions are available in English and, by request, in French. All tests are provided free of charge, but limits may be placed on order volumes to ensure access for all students.

For the greatest benefit, special-format practice tests should be written under conditions similar to those of the corresponding provincial achievement test. The same rules regarding the use of resources and devices should be followed.

Braille versions must be returned to Alberta Education after use.

For more information or to place an order, contact

Laura LaFramboise, Distribution Coordinator, Examination Administration
780-641-9116 or Laura.LaFramboise@gov.ab.ca
Suggestions for answering questions

- Before you begin, find out how much time you have.
- Ask questions if you are unsure of anything.
- Skim through the whole test before beginning. Find out how many questions there are, and plan your time accordingly.
- Answer the easier questions first; then go back to the more difficult ones.
- Do not spend too much time on any one question. Make a mark (*) or (?) beside any questions you have difficulty with, and go back to them if you have time.
- Read each question carefully, underline or highlight key words, and try to determine an answer before looking at the choices.
- Read all the choices and see which one best fits the answer.
- When you are not sure which answer is correct, cross out any choices that are wrong and then select the best of the remaining choices.
- If time permits, recheck your answers.
- Double-check to make sure that you have answered everything before handing in the test.
- Read the information given using the strategy that works best for you. You should either
  - look at all the information and think carefully about it before you try to answer the question
  OR
  - read the questions first and then look at the information, keeping in mind the questions you need to answer
- Make sure that you look at all forms of the information given. Information may be given in words, charts, pictures, graphs, or maps.
- When information is given for more than one question, go back to the information before answering each question.
- Check your work when you calculate an answer, even when your answer is one of the choices.
- When answering “best answer” questions, be sure to carefully read all four alternatives (A, B, C, and D) before choosing the answer that you think is best. These questions will always include a boldfaced qualifier such as best, most strongly, or most clearly in their stems. All the alternatives (A, B, C, and D) are, to some degree, correct, but one of the alternatives will be “best” in that it takes more of the information into account or can be supported most strongly by reference to the information.
Opportunities to Participate in Test-development Activities

Field testing

All provincial achievement test questions are field tested before use. By “testing” the test questions, students who write field tests have an opportunity for a practice run at answering questions that could be used on future provincial achievement tests. As well, the teachers have an opportunity to comment on the appropriateness and quality of the test questions.

Through the online field-test request system, teachers can create and modify field-test requests and check the status of these requests. Information regarding the field-test process and the request system is available at Provincial Achievement Tests.

Once the completed requests are received by Provincial Assessment, classes will be selected to ensure that a representative and sufficiently large sample of students from across the province take part in the field test. Every effort will be made to place field tests as requested; however, because field tests are administered to a prescribed number of students, it may not be possible to fill all requests.

Working groups

Teacher involvement in the development of provincial achievement tests is important because it helps to ensure the validity and appropriateness of the assessments.

Teacher working groups are used throughout the test-development process to create raw forms of test questions and to review and revise draft forms of provincial achievement tests. These working groups usually meet for one or two days, two or three times per year. Occasionally, these meetings are held on weekends.

To be eligible to serve on a test-development working group, a teacher must currently be teaching the course in question or must have taught the course within the past three years.

Teachers participating in working groups are selected from the working-group nominees approved by superintendents of school jurisdictions. The call for nominations usually occurs in September. However, we will accept further nominations throughout the year. In some subjects, more teachers may be nominated for working groups than are needed. When teachers are selected, there must be a balance of first-time and experienced working-group members and regional representation by zone, school authority, and school. Unfortunately, not everyone whose name is submitted will be selected.
Appendix 1: Levels of Item Complexity

<table>
<thead>
<tr>
<th>LEVELS OF ITEM COMPLEXITY</th>
<th>Moderate Complexity</th>
<th>High Complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Complexity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Items in this category require students to rely heavily on recalling and recognizing previously learned concepts and principles. Items typically specify what students are to do, which is often to carry out some procedure that can be performed mechanically. Students would not be expected to come up with original methods for finding a particular solution. The following list illustrates some of the demands that items of low complexity may make of students.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Items in this category involve more flexibility of thinking and choice among alternatives than those in the low-complexity category. Moderate-complexity items require a response that goes beyond the habitual, is not specified, and may require more than a single step. The student is expected to decide what to do, using informal methods of reasoning and problem-solving strategies, and to bring together skills and knowledge from various domains. The following list illustrates some of the demands that items of moderate complexity may make of students.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Items in this category make heavy demands on students by requiring them to engage in more-abstract reasoning, planning, analysis, judgment, and creative thought. The following list illustrates some of the demands that items of high complexity may make of students.</td>
<td></td>
</tr>
</tbody>
</table>

- Recall or recognize a fact, term, or property.
- Recognize an example of a concept.
- Perform a specified procedure.
- Evaluate an expression in an equation or a formula for a single variable.
- Solve a one-step word problem.
- Draw or measure simple 2-D shapes or 3-D objects.
- Retrieve information from a graph, table, or figure.
- Solve a word problem requiring multiple steps.
- Compare figures or statements.
- Provide a justification for steps in a solution process.
- Interpret a visual representation.
- Retrieve information from a graph, table, or figure and use it to solve a problem requiring multiple steps.
- Interpret a simple argument.
- Generalize a pattern.
- Perform a procedure having multiple steps and multiple decision points.
- Analyze similarities and differences between procedures and concepts.
- Formulate an original problem, given a situation.
- Solve a problem in more than one way.
- Explain and justify a solution to a problem.
- Describe, compare, and contrast solution methods.
- Formulate a mathematical model for a complex situation.
- Analyze the assumptions made in a mathematical model.
- Analyze or produce a deductive argument.
- Provide a mathematical justification.
Appendix 2: Example of Part A Instructions Pages and Examples of Questions

Example of Grade 6 Mathematics Part A instructions pages

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Grade 6 Provincial Achievement Test
Mathematics
Part A

To the Teacher:

Read these instructions to your students.

Description

• There are 15 numerical-response questions
  on this test.

Time: 20 minutes. You have up to 40 minutes to complete this test should you need it.

Instructions

• Turn to the last page of the test booklet. Carefully fold and tear out the machine-scored answer sheet along the perforation.

• Use only an HB pencil to mark your answer.

• You may use manipulatives; however, use of a calculator is not permitted.

You may write in this booklet if you find it helpful. Make sure that your answers are placed on the answer sheet.

2020

• Try to answer every question.

• If you change an answer, erase your first mark or marks completely.

• Make sure that the number of the question on your answer sheet matches the number of the question that you are answering.

• When you have completed the test, please answer the survey question, which appears after the last test question.

• Now read the detailed instructions for answering numerical-response questions.

Numerical Response

• Record your answer on the answer sheet provided by writing it in the boxes and then by filling in the corresponding circles.

• Enter your answer, one digit per box, beginning in the left-hand box. A decimal point, if needed, goes in its own box. Leave any unused boxes blank.

• You may fill in the circles below the boxes for each of your answers as you do the test; however, you may also fill in the circles after you have completed this test and your teacher has collected your test booklet.
Example 1

Answer: 4

Record 4 on the answer sheet

Fill in the corresponding circle

Example 3

Answer: 0.3

Record 0.3 on the answer sheet

Fill in the corresponding circles

Example 2

Answer: 9.2

Record 9.2 on the answer sheet

Fill in the corresponding circles

Example 4

Answer: 22.5

Record 22.5 on the answer sheet

Fill in the corresponding circles
Examples of *Grade 6 Mathematics Part A* questions

1. What is $32.5 + 18.6$?
   
   Answer: ________

2. What is $4.69 + 0.85$?
   
   Answer: ________

3. What is $35.2 - 18.5$?
   
   Answer: ________

4. What is $18 \times 40$?
   
   Answer: ________

5. What is $344 \div 4$?
   
   Answer: ________

6. What is $3 + 0.6 + 4.75$?
   
   Answer: ________

7. What is $5307 - 2299$?
   
   Answer: ________

8. What is $25.7 \times 3$?
   
   Answer: ________
Use the following information to answer question 9.

\[ 240.7 \times 5 = 120 \square.5 \]

9. Which digit could be placed in the blank space above to make the equation correct?

Answer: 120\square.5

10. What is 18.9 \div 3?

Answer: \_

11. What is 32.4 \div 8?

Answer: \_

12. What is 8.2 \minus{} 4.05?

Answer: \_

13. What is 3 \minus{} 1.68?

Answer: \_

14. What is 6.05 \div 5?

Answer: \_

15. What is 32 \times 19?

Answer: \_
Example of *Grade 6 Mathematics Part A* answer sheet - blank
Example of *Grade 6 Mathematics Part A* answer sheet - key
Appendix 3: Example of Part B Instructions Page and Examples of Questions

Example of Grade 6 Mathematics Part B instructions page

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Grade 6 Provincial Achievement Test
Mathematics
Part B

To the Teacher:
• Read these instructions to your students.

Description
• There are 40 multiple-choice questions on this test.
Time: 70 minutes. You have up to 140 minutes to complete this test should you need it.

Instructions
• Turn to the last page of the test booklet. Carefully fold and tear out the machine-scored answer sheet along the perforation.
• Use only an HB pencil to mark your answer.
• Manipulatives (e.g., a protractor, a ruler, tracing paper) and a calculator are recommended; however, a scientific or graphing calculator is not permitted.
• You may not use a dictionary, a thesaurus, or other reference materials.
• Read each question carefully and choose the correct or best answer.

Try to answer every question.
• If you change an answer, erase your first mark completely.
• Make sure that the number of the question on your answer sheet matches the number of the question that you are answering.
• When you have completed the test, please answer the survey question, which appears after the last test question.
• Now read the detailed instructions for answering multiple-choice questions.

Multiple Choice
• Each question has four possible answers from which you are to choose the correct or best answer.
• Locate the question number on the separate answer sheet provided and fill in the circle that corresponds to your choice.

Example
If \( x = 3 \), what is the value of \( x + 8 \)?

A. 10  
B. 11  
C. 12  
D. 13

Answer: 11

Answer Sheet
〇〇〇〇
Examples of Grade 6 Mathematics Part B questions

Low complexity

Use the following information to answer question 1.

A new school is being built in a community. Each month the local newspaper reports on the progress of the new school’s construction. A Grade 6 class graphs this information.

Progress of New School’s Construction

1. During how many months did construction progress by more than 10%?

   A. 3
   B. 4
   C. 5
   D. 6
Moderate complexity

Use the following information to answer question 2.

Candace earns $5.75 an hour for babysitting and $6.40 an hour for doing yardwork. Candace saves the money she earns from 8 hours of babysitting and 3 hours of yardwork.

2. How much more money does Candace need to save to buy a camera that costs $119.80?

A. $51.35
B. $54.60
C. $65.20
D. $68.45
High complexity

Use the following information to answer question 3.

A total of 10 packages are arranged in the back of a cargo truck as shown in the diagram below. One large package has the same mass as two medium packages. One medium package has the same mass as three small packages.

3. How many small packages need to be loaded onto the right side of the truck to balance the load?

A. 8  
B. 9  
C. 12  
D. 13
Example of *Grade 6 Mathematics Part B* answer sheet - key
Appendix 4: Examples of Descriptions for Audio Versions of the Mathematics 6 Provincial Achievement Test

This appendix has been prepared by Alberta Education Provincial Assessment staff. Its purpose is to provide school staff with examples of the descriptions of diagrams, illustrations, and visuals used in provincial achievement test audio versions, which are available to students as an accommodation. These examples are neither exhaustive nor prescriptive. Test content is shown in black text and descriptions in blue text.

For students who are enrolled with a school, and who typically use audio for their coursework, no application is required to receive this accommodation when writing provincial achievement tests. Such students may have visual impairments, physical disabilities, or learning disabilities. The audio version is used by students in conjunction with a print, digital, or Braille version of the test.

### Units

<table>
<thead>
<tr>
<th>Unit</th>
<th>Read as</th>
</tr>
</thead>
<tbody>
<tr>
<td>s</td>
<td>seconds</td>
</tr>
<tr>
<td>min</td>
<td>minutes</td>
</tr>
<tr>
<td>h</td>
<td>hours</td>
</tr>
<tr>
<td>m</td>
<td>metres</td>
</tr>
<tr>
<td>cm²</td>
<td>square centimetres</td>
</tr>
<tr>
<td>m³</td>
<td>cubic metres</td>
</tr>
<tr>
<td>L</td>
<td>litres</td>
</tr>
<tr>
<td>mL</td>
<td>millilitres</td>
</tr>
<tr>
<td>g</td>
<td>grams</td>
</tr>
<tr>
<td>mg</td>
<td>milligrams</td>
</tr>
<tr>
<td>m/s</td>
<td>metres per second</td>
</tr>
<tr>
<td>km/h</td>
<td>kilometres per hour</td>
</tr>
<tr>
<td>ºC</td>
<td>degrees Celsius</td>
</tr>
<tr>
<td>$1.25</td>
<td>one dollar and twenty-five cents</td>
</tr>
</tbody>
</table>
**Numerical values**

<table>
<thead>
<tr>
<th>Numerical Value</th>
<th>Read as</th>
</tr>
</thead>
<tbody>
<tr>
<td>183.48</td>
<td>one hundred eighty-three decimal four eight</td>
</tr>
<tr>
<td>2 321</td>
<td>two thousand three hundred twenty-one</td>
</tr>
<tr>
<td>(\frac{3}{5})</td>
<td>three over five</td>
</tr>
<tr>
<td>–5</td>
<td>negative five</td>
</tr>
<tr>
<td>(\frac{6 + 3}{2})</td>
<td>six plus three all over two</td>
</tr>
<tr>
<td>(\pi)</td>
<td>pi</td>
</tr>
</tbody>
</table>

**Note:** Common fractions, such as \(\frac{1}{2}\), may be read as “one over two” or “one half.”

---

**Symbols and notation**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Read as</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>plus</td>
</tr>
<tr>
<td>–</td>
<td>minus</td>
</tr>
<tr>
<td>×</td>
<td>times</td>
</tr>
<tr>
<td>÷</td>
<td>divided by</td>
</tr>
<tr>
<td>=</td>
<td>equals or is equal to</td>
</tr>
<tr>
<td>(a^2)</td>
<td>(a) squared</td>
</tr>
<tr>
<td>(b^3)</td>
<td>(b) cubed</td>
</tr>
<tr>
<td>(c^4)</td>
<td>(c) to the exponent four</td>
</tr>
<tr>
<td>(2n + 1)</td>
<td>open bracket, two (n) plus one, closed bracket</td>
</tr>
<tr>
<td>(x &gt; 0)</td>
<td>(x) is greater than zero</td>
</tr>
<tr>
<td>(x \leq 0)</td>
<td>(x) is less than or equal to zero</td>
</tr>
<tr>
<td>(x = 0)</td>
<td>(x) is equal to zero</td>
</tr>
<tr>
<td>(\sqrt{\frac{16}{9}})</td>
<td>the square root of (pause) sixteen over nine</td>
</tr>
<tr>
<td>(\frac{\sqrt{16}}{9})</td>
<td>the square root of sixteen all over nine</td>
</tr>
<tr>
<td>15:64</td>
<td>fifteen to sixty-four</td>
</tr>
</tbody>
</table>

**Note:** Commas are to be read only when reading ordered pairs.
### Tables

Introduce the table starting with the title, if there is one, and then identify the number of columns and rows. Tables can be read in two different ways. One way is to list the column headings and any corresponding units first. Next, read across each row from left to right, stating the column heading before reading the data in each cell. Read empty spaces in tables as “blank.”

<table>
<thead>
<tr>
<th>Number of People (n)</th>
<th>Cost (c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>$55.00</td>
</tr>
<tr>
<td>4</td>
<td>$64.50</td>
</tr>
<tr>
<td>6</td>
<td>$74.00</td>
</tr>
<tr>
<td>8</td>
<td>$83.50</td>
</tr>
</tbody>
</table>

There is a table with two columns and four rows. The column headings are “Number of People, n” and “Cost, c.”

- Number of People: two; Cost: fifty-five dollars and zero cents
- Number of People: four; Cost: sixty-four dollars and fifty cents
- Number of People: six; Cost: seventy-four dollars and zero cents
- Number of People: eight; Cost: eighty-three dollars and fifty cents
Graphs

Introduce the graph starting with the title, if there is one, and then describe the labels and scales for the horizontal axis and the vertical axis. If there are no marks or scale on the axis, state this. When there are four graphs for each of the multiple-choice options (A, B, C, and D), describe the labels and scales for the similarities between the graphs, such as the horizontal axis and the vertical axis, and then describe the shape of the line for each of the choices.

There is a grid representing the first quadrant of the Cartesian plane. The horizontal axis and vertical axis are scaled from zero to twenty, marked and labelled in increments of one. Triangle $ABC$ is located on the grid.

Point $A$ is located at nine comma fifteen.

Point $B$ is located at three comma ten.

Point $C$ is located at twelve comma nine.
Line graphs

There is a line graph titled “Ethan’s Trip.” The horizontal axis is labelled “Time” in hours, scaled from zero to six, marked and labelled in increments of one. The vertical axis is labelled “Distance travelled” in kilometres, scaled from zero to five hundred, marked in increments of fifty and labelled in increments of one hundred. The dots have been connected in order by straight lines.
Bar graphs

Introduce the graph starting with the title, then describe the label for the horizontal axis. List the label for each bar, and then describe the label and scale for the vertical axis. Describe the legend if available.

There is a double bar graph titled “Track and Field Competition Results.” The horizontal axis is labelled “School” and from left to right the bars are labelled “Central Elementary,” “École St. Patrice,” “Forest View,” “Summerfield Elementary,” “Walnut Grove,” and “Wandering Creek School.” The vertical axis is labelled “Number of points,” scaled from zero to twenty-four, marked in increments of two and labelled in increments of four.

Two bar graphs are shown. A legend shows that the blue bar graph represents 2014 and the red bar graph represents 2015.
**Number lines**

Introduce the number line by describing the tick marks and arrows. Identify if it has open or solid, closed circles and their locations.

There is a diagram of a number line that has arrows at each end with two labelled points indicated by solid, closed circles. The number line is marked and labelled, reading from left to right, negative three, negative two, negative one; and there are seven tick marks between each label. Point \( M \) is located two tick marks to the right of negative three. Point \( N \) is located three tick marks to the right of negative two.
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