



MATHEMATICS

Grade 7

TEKS/TAKS

Multiple Choice Questions

Organized by TEKS

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GRADE 7 MULTIPLE-CHOICE QUESTIONS ORGANIZED BY TEKS

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TAKS Objective 1

The student will demonstrate an understanding of numbers, operations and quantitative reasoning.

TEKS	Student Expectation	Number of Questions
7.1A	Compare and order integers and positive rational numbers	35
7.1B	Convert between fractions, decimals, whole numbers, and percents mentally, on paper, or with a calculator	29
7.1C	Represent squares and square roots using geometric models	15
7.2A	Represent multiplication and division situations involving fractions and decimals with models, including concrete objects, pictures, words, and numbers	40
7.2B	Use addition, subtraction, multiplication, and division to solve problems involving fractions and decimals	62
7.2C	Use models, such as concrete objects, pictorial models, and number lines, to add, subtract, multiply, and divide integers and connect the actions to algorithms	28
7.2D	Use division to find unit rates and ratios in proportional relationships such as speed, density, price, recipes, and student-teacher ratio	42
7.2E	Simplify numerical expressions involving order of operations and exponents	22
7.2F	Select and use appropriate operations to solve problems and justify the selections	24
7.2G	Determine the reasonableness of a solution to a problem	30

TAKS Objective 2

The student will demonstrate an understanding of patterns, relationships and algebraic reasoning.

TEKS	Student Expectation	Number of Questions
7.3A	Estimate and find solutions to application problems involving percent	24
7.3B	Estimate and find solutions to application problems involving proportional relationships such as similarity, scaling, unit costs, and related measurement units	33
7.4A	Generate formulas involving unit conversions, perimeter, area, circumference, volume, and scaling	26
7.4B	Graph data to demonstrate relationships in familiar concepts such as conversions, perimeter, area, circumference, volume, and scaling	17
7.4C	Use words and symbols to describe the relationship between the terms in an arithmetic sequence (with a constant rate of change) and their positions in the sequence	19
7.5A	Use concrete and pictorial models to solve equations and use symbols to record the actions	13
7.5B	Use concrete and pictorial models to solve equations and use symbols to record the actions	22

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TAKS Objective 3

The student will demonstrate an understanding of geometry and spatial reasoning.

TEKS	Student Expectation	Number of Questions
7.6A	Use angle measurements to classify pairs of angles as complementary or supplementary	18
7.6B	Use properties to classify triangles and quadrilaterals	29
7.6C	Use properties to classify three-dimensional figures, including pyramids, cones, prisms, and cylinders	27
7.6C	Use critical attributes to define similarity	16
7.7A	Locate and name points on a coordinate plane using ordered pairs of integers	34
7.7B	Graph reflections across the horizontal or vertical axis and graph translations on a coordinate plane	30
7.8A	Sketch three-dimensional figures when given the top, side, and front views	12
7.8B	Make a net (two-dimensional model) of the surface area of a three-dimensional figure	12
7.8B	Use geometric concepts and properties to solve problems in fields such as art and architecture	20

TAKS Objective 4

The student will demonstrate an understanding of the concepts and uses of measurement.

TEKS	Student Expectation	Number of Questions
7.9A	estimate measurements and solve application problems involving length (including perimeter and circumference) and area of polygons and other shapes	60
7.9B	Select and use appropriate units, tools, or formulas to measure and solve problems involving length (including circumference), area, time, temperature, volume and weight	18
7.9C	Measure angles	32

TAKS Objective 5

The student will demonstrate an understanding of probability and statistics.

TEKS	Student Expectation	Number of Questions
7.10A	Construct sample spaces for simple or composite experiments	19
7.10B	Find the probability of independent events	10
7.11A	Select and use an appropriate representation for presenting and displaying relationships among collected data, including line plot, line graph, bar graph, stem and leaf plot, circle graph, and Venn diagrams, and justify the selection	22
7.11B	Make inferences and convincing arguments based on an analysis of given or collected data	25
7.12A	Describe a set of data using mean, median, mode, and range	22
7.12B	Choose among mean, median, mode, or range to describe a set of data and justify the choice for a particular situation	18

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TAKS Objective 6

The student will demonstrate an understanding of the mathematical processes used in problem solving.

TEKS	Student Expectation	Number of Questions
7.13A	Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics	22
7.13B	Use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness	16
7.13C	Select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem	21
7.14A	Communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models	16
7.15A	Make conjectures from patterns or sets of examples and nonexamples	22
7.15B	Validate his/her conclusions using mathematical properties and relationships	20

TOTAL GRADE 7 MULTIPLE CHOICE QUESTIONS = 1,000

GRADE 7 MATHEMATICS

(7.4) Patterns, relationships, and algebraic thinking. The student represents a relationship in numerical, geometric, verbal, and symbolic form. The student is expected to: (C) use words and symbols to describe the relationship between the terms in an arithmetic sequence (with a constant rate of change) and their positions in the sequence.

Which expression can be used to find the n th term in this sequence?

Position	1st	2nd	3rd	4th	5th	n th
Value of Term	4	7	10	13	16	?

- A $3n + 1$
- B $n + 3$
- C $\frac{n}{2} + 3$
- D $n + 4$

The following sequence forms a pattern.

0.3, 0.6, 0.9, 1.2, ...

If this pattern continues, which expression could be used to find the tenth term?

- F 10×0.3
- G $10 + 0.3$
- H $10 \div 0.3$
- J 10×0.1

If n is the position of a number in this sequence, which expression identifies this pattern?

Position	1st	2nd	3rd	4th	5th	n th
Value of Term	5	7	9	11	13	?

- A $4n + 1$
- B $6n - 1$
- C $2n + 3$
- D $5n$

If n is the position of a number in this sequence, which expression identifies this pattern?

Position	1st	2nd	3rd	4th	5th	n th
Value of Term	2	5	8	11	14	?

- A $4n - 2$
- B $3n + 1$
- C $2n$
- D $3n - 1$

What is the missing number in this sequence?

4, 9, 14, 19, , 29, 34

- F 23
- G 26
- H 24
- J 25

If n is the position of a number in this sequence, which expression identifies this pattern?

Position	1st	2nd	3rd	4th	5th	n th
Value of Term	11	16	21	26	31	?

- A $n + 10$
- B $8n$
- C $n^2 + 1$
- D $5n + 6$

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If n is the position of a number in this sequence, which expression identifies this pattern?

Position	1st	2nd	3rd	4th	5th	n th
Value of Term	2	2.5	3	3.5	4	?

- F** $0.5n + 1$
- G** $n + 1$
- H** $(n+3) \div 2$
- J** $2n$

The following sequence forms a pattern.

1, 4, 7, 10, 13, ...

If this pattern continues, which expression can be used to find the *ninth* term?

- A** 9×2
- B** $9 \times 3 + 2$
- C** $9 \times 3 - 2$
- D** $9 + 9$

If n is the position of a number in this sequence, which expression identifies this pattern?

Position	1st	2nd	3rd	4th	5th	n th
Value of Term	0	3	6	9	12	?

- F** $n - 1$
- G** $2n - 2$
- H** $2n + 1$
- J** $3n - 3$

If n is the position of a number in this sequence, which expression identifies this pattern?

Position	1st	2nd	3rd	4th	5th	n th
Value of Term	5	6	7	8	9	?

- A** $n^2 + 4$
- B** $2n + 3$
- C** $n + 4$
- D** $2n^2 + 1$

The following sequence forms a pattern.

3, 5, 7, 9, ...

If this pattern continues, which expression can be used to find the 13th term?

- F** $13 + 2$
- G** 13×2
- H** $2 \times 13 + 1$
- J** $2 \times 13 - 1$

Which description shows the relationship between a term and n , its position in the sequence?

Position	1st	2nd	3rd	4th	5th	n th
Value of Term	7	12	17	22	27	?

- A** Add 5 to n and divide by 6
- B** Multiply n by 5 and add 1
- C** Multiply n by 5 and add 2
- D** Multiply n by 6 and add 1

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(7.4) Patterns, relationships, and algebraic thinking. The student represents a relationship in numerical, geometric, verbal, and symbolic form. The student is expected to: (C) use words and symbols to describe the relationship between the terms in an arithmetic sequence (with a constant rate of change) and their positions in the sequence.

Which description shows the relationship between a term and n , its position in the arithmetic sequence?

Position	1st	2nd	3rd	4th	5th	n th
Value of Term	4.5	5	5.5	6	6.5	?

- F** Add 3.5 to n
- G** Multiply n by 0.5 and add 4
- H** Multiply n by 2 and add 2.5
- J** Multiply n by 0.5 and subtract 5

Which sequence follows the rule $3(n+2)$, where n is the position in the sequence?

- A** {3, 4, 5, 6, 7, ...}
- B** {9, 11, 13, 15, 17, ...}
- C** {6, 9, 12, 15, 18, ...}
- D** {9, 12, 15, 18, 21, ...}

Which expression describes a term in the n th position of an arithmetic sequence?

Position	1st	2nd	3rd	4th	5th	n th
Value of Term	3.5	6.5	9.5	12.5	15.5	?

- F** $1.5n + 2$
- G** $3n + 0.5$
- H** $3(n + 0.5)$
- J** $0.5n + 3$

Which arithmetic sequence follows the rule $(n-1) + 2n$, where n is the position in the sequence?

- A** {3, 5, 7, 9, 11, ...}
- B** {2, 5, 8, 11, 14, ...}
- C** {2, 4, 8, 12, 15, ...}
- D** {1, 3, 5, 7, 9, ...}

Which sequence follows the rule $6n - 2$, where n represents the position in the sequence?

- F** 6, 12, 18, 24, ...
- G** 4, 10, 16, 22, ...
- H** 4, 12, 16, 24, ...
- J** 4, 12, 18, 22, ...

A sequence is defined by the expression $\frac{2}{3}n + 1$, where n represents the position in the sequence. What is the value of the 18th term in this sequence?

- A** 37
- B** 12
- C** 13
- D** 11

The relationship between a term of a sequence and its position, n , is described by the following: Add 5 to n and then divide by 3. What is the value of the 25th term in this sequence?

- F** 10
- G** 2
- H** $8\frac{1}{3}$
- J** Not here