

RIT

Reference Chart for Mathematics 6+



MAP tests produce scores that make it possible to monitor student growth from year to year along developmental curriculum scales or continua. The chart inside shows examples of the kinds of work students can do at various points along the MAP RIT scale, assuming they have been exposed to content. This type of information is helpful in supporting appropriate instruction.

Please note that each subject area has a unique alignment to the RIT scale. As a result, scores between subjects are not equivalent.

How to use the charts:

1. Find the column containing the student's score for a particular subject. For example, if the student's score in "Geometry" is 188, refer to the column labeled 181-190.
2. Read the column(s) from left to right to locate a sample test question for a given reporting area, such as "Geometry." A student's score suggests that, currently, he or she is likely to get about half of the questions of this difficulty correct.
3. Now look at the questions in the column(s) to the left, and higher on the page. The student is likely to get most of these correct, assuming he or she has been instructed in these skills and concepts.
4. The questions further down the page will probably require new learning on the student's part.

Please note:

Test items in this booklet are sample items, and many are not calibrated or field-tested. For purposes of this document, RIT scale alignment is an approximation.

Operations and Algebraic Thinking

Students can apply and extend previous understandings of arithmetic to algebraic expressions, equations, and inequalities. They can model relationships between quantities using functions and compare, interpret, and build functions in different representations.

201-210

Simplify.

$5 + (2 + 3^2) - 1$

- A. 12
- ✓B. 15
- C. 17
- D. 29
- E. 99

211-220

If $6n = 102$, n equals

- A. 12.
- ✓B. 17.
- C. 108.
- D. 196.
- E. 612.

221-230

Evaluate $gh - b$ if $g = 4$, $h = 9$, $b = 12$.

- A. 48
- B. 37
- C. 25
- ✓D. 24
- E. 1

231-240

Drag a number into each box to represent 64 using exponents.

= 64

- 2 3 4 16 32 60

241-250

Ken works as a salesperson in a local electronics store. He earns \$200 each week plus 6% commission on his total sales.

Which equation correctly represents Ken's weekly earnings, E , based on s , his total sales?

- A. $E = 0.06s(\$200)$
- B. $E = 6s + \$200$
- ✓C. $E = 0.06s + \$200$
- D. $E = 6s(\$200)$

above **250**

Which expression is equivalent to $\frac{8^{-9}}{8^{-3}}$?

- A. 8^{-12}
- ✓B. 8^{-6}
- C. 8^{-3}
- D. 8^3
- E. 8^6

The Real and Complex Number Systems

Students can apply and extend previous understandings of operations to the real and complex number systems by solving problems involving ratio, rate, proportion, rational numbers, irrational numbers, complex numbers, and the coordinate plane.

201-210

The sign shows the cost of a bag of apples at Hank's Fruit Stand.



What is the unit price?

- ✓A. \$0.85 per apple
- B. \$0.90 per apple
- C. \$1.10 per apple
- D. \$1.18 per apple

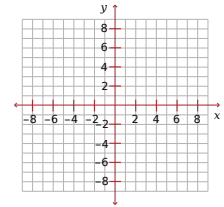
211-220

Which number line shows how to find the sum of $-8 + (-2)$?

- A.
- ✓B.
- C.
- D.

221-230

Move the point to the coordinates $(-5, 6)$.



Input field for the coordinates (-5, 6).

231-240

Which is closest to $\sqrt{10}$?

- A. 3.0
- ✓B. 3.2
- C. 3.5
- D. 5.0

241-250

A \$30.00 pair of jeans is discounted 20%.

If sales tax is 5%, what will be the final price for the jeans?

- A. \$22.80
- B. \$24.00
- C. \$24.20
- ✓D. \$25.20
- E. \$28.35

above 250

Which is the simplified form of $2 + 3\sqrt{-12}$?

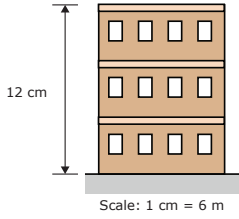
- A. $8i\sqrt{3}$
- ✓B. $2 + 6i\sqrt{3}$
- C. $-i\sqrt{12}$
- D. $2 - 3i\sqrt{12}$
- E. $-4i\sqrt{12}$

Geometry

Students can solve problems involving area, circumference, surface area, volume, and angle measure. They understand congruence and similarity in terms of transformations and apply theorems involving properties of circles and right triangles.

201-210

Use the scale drawing of the building to answer the question.

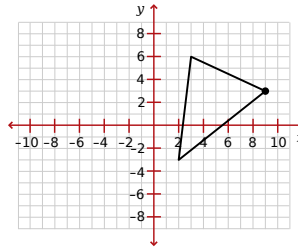


What is the actual height of the building?

- A. 2 m
- B. 6 m
- ✓C. 72 m
- D. 144 m

211-220

Use the graph to answer the question.

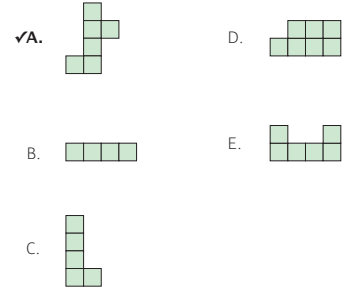


The triangle is reflected across the y-axis and then reflected across the x-axis. P' is the image of P after both reflections. What are the coordinates of P'?

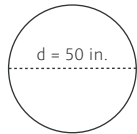
- A. (-9, -9)
- ✓B. (-9, -3)
- C. (-7, -9)
- D. (-7, -3)

221-230

Which of these nets would fold into a closed cube?



231-240

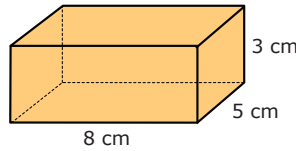


Use the formulas $C = \pi d$ with 3.14 as an approximation for pi.

Find the circumference of this circle to the nearest inch.

- ✓A. 157 in.
- B. 150 in.
- C. 1570 in.
- D. 53.14 in.
- E. 46.86 in.

241-250



Calculate the surface area of this rectangular solid.

- A. 79 cm²
- B. 110 cm²
- C. 120 cm²
- D. 128 cm²
- ✓E. 158 cm²

above **250**

Click on all the transformations that carry the regular octagon onto itself.



Reflection over line k



Reflection over line n



Rotation 60° clockwise about P



Rotation 90° clockwise about P



Reflection over line r



Reflection over line s



Rotation 120° clockwise about P



Rotation 270° clockwise about P

Statistics and Probability

Students can summarize, represent, and interpret data, including measures of center and variability, and investigate patterns of association in bivariate data. They can understand and evaluate random processes and compute probabilities of events in a uniform probability model.

201-210

A box contains 13 balls. 3 balls are red, 5 are blue, 4 are orange, and 1 is yellow.

What is the probability of picking a red ball?

- A. $\frac{3}{5}$
- B. $\frac{3}{10}$
- C. $\frac{1}{13}$
- ✓D. $\frac{3}{13}$
- E. $\frac{5}{13}$

211-220

Diana received scores of 100, 63, 80, 85, and 92 on her math tests.

What is her mean (average) score?

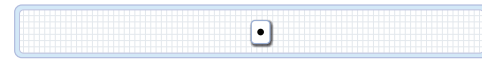
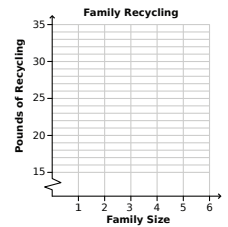
- A. 83
- ✓B. 84
- C. 85
- D. 86
- E. 87

221-230

The table shows family size and recycling information for several different families.

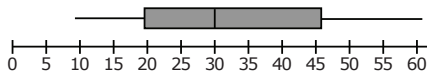
Drag the points onto the graph to make a scatter plot of the data.

Family Size	Pounds of Recycling
3	19
4	22
2	22
5	32
3	28
3	18
5	34



231-240

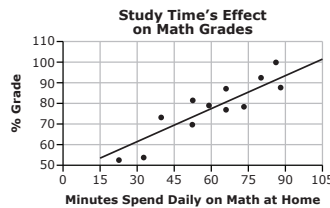
Look at the box-and-whisker plot.



Which number represents the median of the data?

- A. 20
- ✓B. 30
- C. 32.5
- D. 35
- E. 45

241-250



If Sally studies math for 45 minutes a day at home, predict her math grade based on the scatter plot.

- A. 50
- B. 60
- ✓C. 70
- D. 80
- E. 90

above **250**

At Washington High School, 20% of the teachers coach a sports team, and 12% of the teachers coach a sports team and lead an academic club.

If one teacher chosen at random coaches a sports team, what is the probability that this teacher also leads an academic club?

- A. 8%
- B. 16%
- C. 32%
- ✓D. 60%