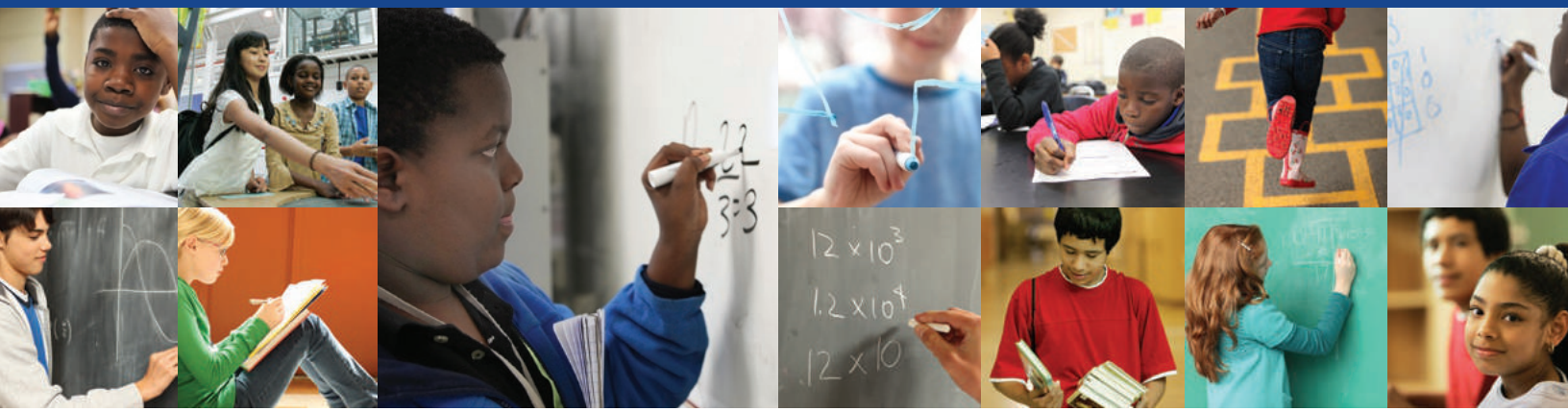
RIT
Reference Chart for Mathematics 2 – 5



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Operations and Algebraic Thinking

Students can represent and solve problems involving the four operations, understand and apply properties of operations, generate and analyze patterns, and write and interpret numerical expressions.

below 161

6 + 2 = ☐

A. 4
✓**B.** 8
C. 9
D. 26
E. 62

161–170

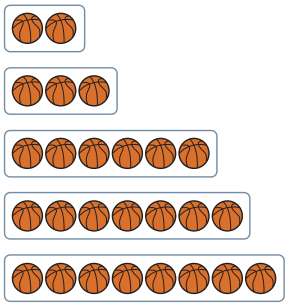
☐ + 7 = 13

☐ = ?

✓**A.** 6
B. 9
C. 10
D. 11
E. 18

171–180

Click on all the sets that have an odd number of basketballs.



181–190

Two children will share the dolls equally. How many dolls will each get?

A. 1
B. 2
✓**C.** 4
D. 8

191–200

Jill sold bags of raisins. The first day she sold 6 bags, and the second day she sold 12. On the third day she sold 18.

If Jill continues to sell bags following the same pattern, how many bags will she sell on the sixth day?

A. 54
B. 48
✓**C.** 36
D. 30
E. 24

201–210

There are 8 hot dog buns in a package. Shay wants to buy the LEAST number of packages to have enough buns for 50 hot dogs.

Which statement is true?

A. Shay should buy 6 packages. She will have exactly the correct number of buns.
B. Shay should buy 6 packages. She will have 2 buns left over.
C. Shay should buy 7 packages. She will have exactly the correct number of buns.
✓**D.** Shay should buy 7 packages. She will have 6 buns left over.

211–220

Which set contains all the factors of 20?

A. (5, 10, 15, 20)
B. (2, 4, 5, 10)
✓**C.** (1, 2, 4, 5, 10, 20)
D. (1, 2, 4, 5, 8, 10, 15, 20)

221–230

[6 × (9 – 4)] + [(6 + 4) ÷ 2]

What is the value of the expression?

A. 20
B. 30
✓**C.** 35
D. 38
E. 58

Numbers and Operations

Students understand the place value system by counting, representing, comparing, rounding, and performing operations with multidigit whole numbers, fractions, and decimals.

below 161

How many?

A. 4
✓**B.** 5
C. 6
D. 7
E. 8

161–170

63
+ 34

A. 31
B. 37
C. 71
✓**D.** 97
E. 98

171–180

99
- 56

A. 34
B. 42
✓**C.** 43
D. 53
E. 155

181–190

60
× 5

What is the product?

A. 30
B. 65
✓**C.** 300
D. 365

191–200

$\frac{5}{7} - \frac{3}{7} =$

A. $\frac{8}{7}$
B. 2
✓**C.** $\frac{2}{7}$
D. 0
E. 7

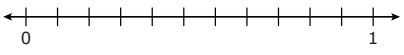
201–210

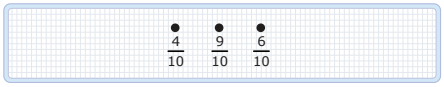
0.32 ÷ 8 =

A. 4.3
B. 0.15
✓**C.** 0.04
D. 0.4
E. 43.75

211–220

Drag the fractions from the toolbox to their correct location on the number line.

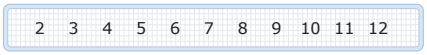




221–230

Drag the numbers to the boxes to make two different fractions equal to $\frac{1}{3}$.

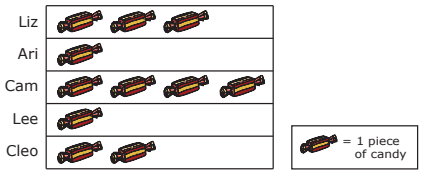
$\frac{1}{3} = \frac{\square}{\square} = \frac{\square}{\square}$



Measurement and Data

Students understand and solve measurement problems involving length, mass, liquid volume, time, money, area, perimeter, volume, and angle. They can generate, represent, and interpret data.

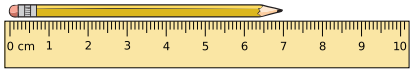
below 161



Who has the most candy?

A. Liz
B. Ari
✓**C.** Cam
D. Lee
E. Cleo

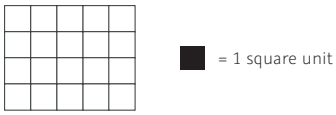
161–170



The pencil is about how many centimeters long?

A. 4 cm
B. 5 cm
C. 6 cm
✓**D.** 7 cm
E. 8 cm

171–180



What is the area of the figure?

A. 18 square units
B. 9 square units
✓**C.** 20 square units
D. 16 square units
E. 5 square units

181–190

The list shows how students in a class spent free time.

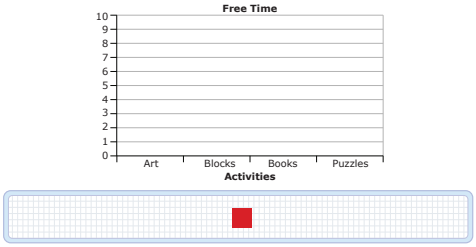
4 students made art.

2 students played with blocks.

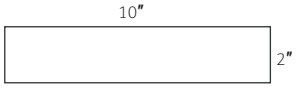
5 students read books.

3 students completed puzzles.

Drag the squares to make a bar graph of the data.



191–200



What is the perimeter of this rectangle?

A. 12 inches
✓**B.** 24 inches
C. 8 inches
D. 16 inches
E. 20 inches

201–210

A plane flew for 5 hours. Click on all the measurements that are equal to 5 hours.

15,000 seconds	18,000 seconds
30,000 seconds	300 minutes
150 minutes	250 minutes

211–220

4 yards = ☐

A. 16 feet
B. 20 feet
✓**C.** 144 inches
D. 80 inches
E. 36 inches

221–230

Regina needs $2\frac{1}{2}$ pounds of fertilizer for her plants. How many ounces is $2\frac{1}{2}$ pounds?

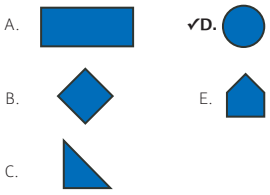
A. 16 ounces
B. 20 ounces
C. 30 ounces
✓**D.** 40 ounces
E. 48 ounces

Geometry

Students understand and reason with geometric concepts by identifying, describing, creating, and classifying two- and three-dimensional figures. They can solve mathematical problems by graphing points on the coordinate plane.

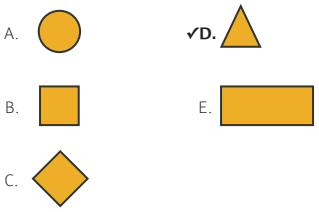
below 161

Which shape does NOT have any corners?



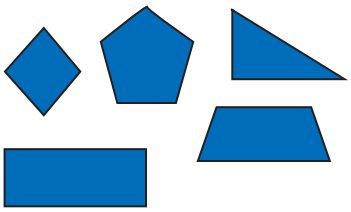
161-170

Which of these shapes is a triangle?



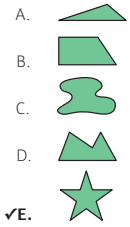
171-180

Click on all the quadrilaterals.

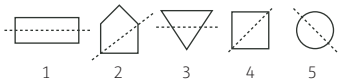


181-190

Which shape has symmetry?



191-200

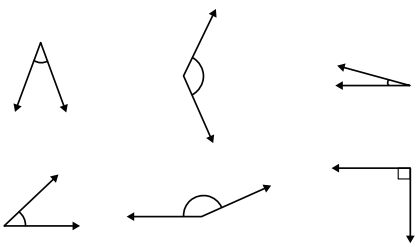


Which figures show a line of symmetry?

✓A. 1, 4, and 5
B. 2, 4, and 5
C. 4 and 5
D. 1 and 4
E. 2, 3, and 4

201-210

Click on all the obtuse angles.



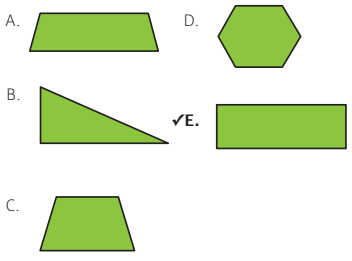
211-220

Which statement about rectangles is true?

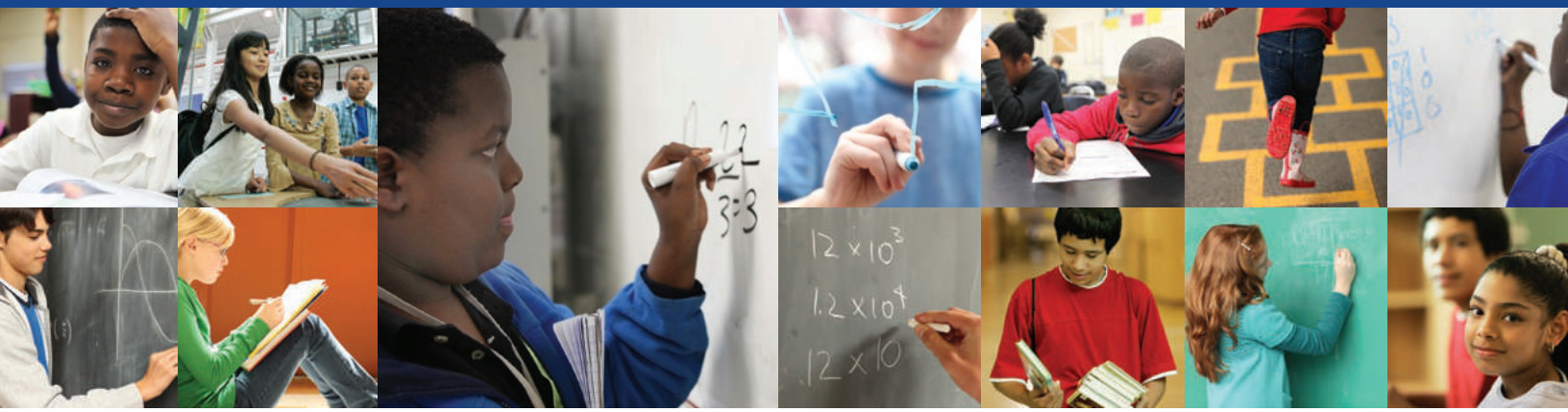
A. All rectangles are squares.
B. All rectangles are trapezoids.
C. All rectangles are rhombuses.
✓D. All rectangles are parallelograms.

221-230

Which shape is a parallelogram?



RIT
Reference Chart for Mathematics 6+



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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.

$\square^{\square} = 64$

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

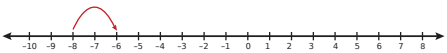
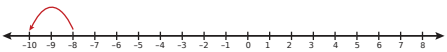
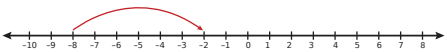
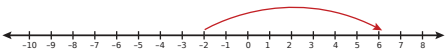
The sign shows the cost of a bag of apples at Hank's Fruit Stand.

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

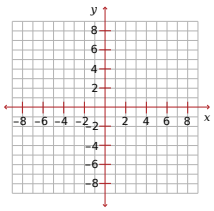
211–220

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).



231–240

Which is closest to √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 √-12?

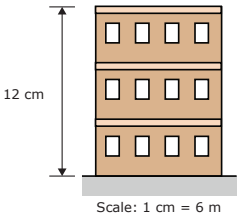
A. $8i\sqrt{3}$
✓B. $2 + 6i\sqrt{3}$
C. $-i\sqrt{12}$
D. $2 - 3i\sqrt{12}$
E. $-4i\sqrt{12}$

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.

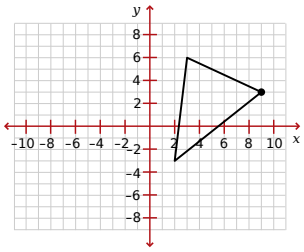


What is the actual height of the building?

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?

✓**A.**

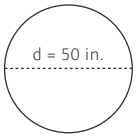
B.

C.

D.

E.

231–240

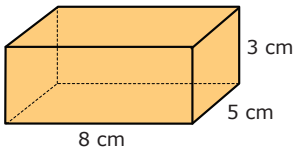


Use the formulas C = πd with 3.14 as an approximation for pi.

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 cm^2
B. 110 cm^2
C. 120 cm^2
D. 128 cm^2
✓**E.** 158 cm^2

above 250

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

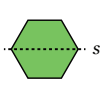
Reflection over line k

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

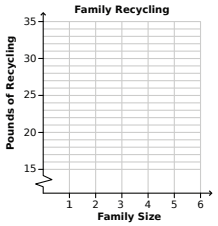
E. 87

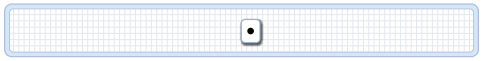
221-230

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.

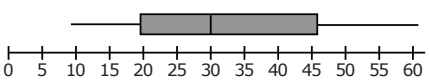
Family Size	Pounds of Recycling
3	19
4	22
2	22
5	32
3	28
3	18
5	34





231-240

Look at the box-and-whisker plot.



Which number represents the median of the data?

A. 20

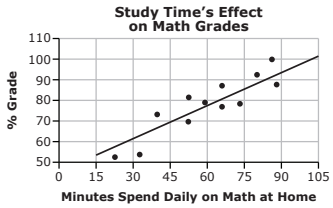
✓**B.** 30

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%