

Big Ideas Math® Game Closet



Race to the Finish

Materials:

- Student directions
- Game pieces
- Game board
- Spinner
- Game cards (with answers printed on backs)
- Lined paper

Directions:

The students will work in groups of 2-4 students. The more students in a group, the longer the activity will take. Students will sort and shuffle the game cards by color. Each player starts with their game piece on the START position of the game board. The first player will spin the spinner and choose the top card from the game card pile corresponding to the color on the spinner. The student will work out the problem on the lined paper. The group member to the left of the student will check their answer on the back of the card. If the answer is correct, the student may advance to the next space of the color spun on the wheel. If the answer is incorrect, the group members must work together to solve the problem, but the student may not advance on this turn. Once the turn is complete, the player to the right may have a chance.



Who Wins?

The player who reaches the FINISH first is the winner. Play continues until each group member reaches the FINISH.

Objectives:

This is a back-to-school review game. Use it before you start the Red Book.

The student will

- write and simplify expressions.
- write and solve equations.
- write and simplify fractions, decimals, and percents.
- solve problems involving fractions, decimals, and percents.
- use geometric formulas to find area, perimeter, circumference, radius, length, etc.

Big Ideas Math® Game Closet



Race to the Finish Student Directions

Materials:

- Game pieces
- Game board
- Spinner
- Game cards
- Lined paper

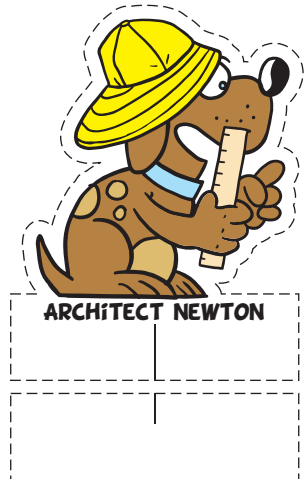
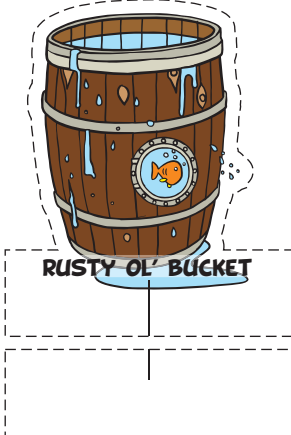
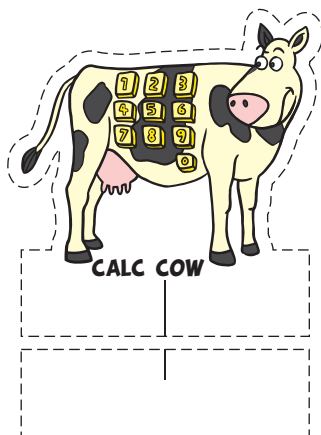
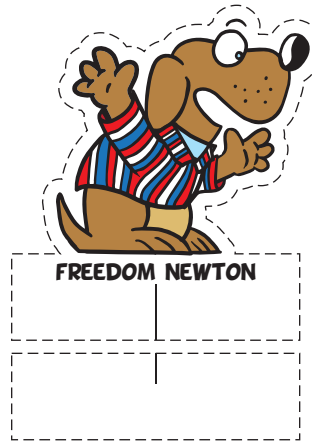
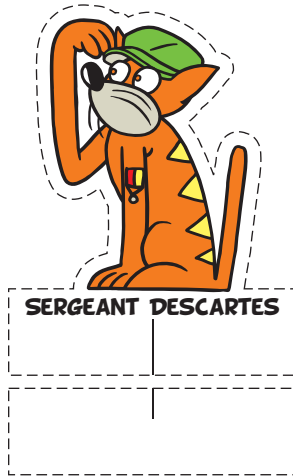
Directions:

Sort the game cards into four piles by color. Shuffle each game card pile and place each pile face up. Each player starts with their game piece on the “Place Pieces Here” position of the game board. If you are the first player, you will spin the spinner and choose the top card from the game card pile corresponding to the color on the spinner. You will work out the problem on lined paper. Once you arrive at a solution, the group member to your left will check your answer on the back of the card. If you get the answer correct, you may advance to the next space of the color you spun on the wheel. If you do not get the answer correct, you and your group members must solve the problem together, but you may not advance on this turn. Once your turn is complete, the player to your right may have a chance.

Who Wins?:

The player who reaches the FINISH first is the winner! The other players keep playing until each player reaches the FINISH.





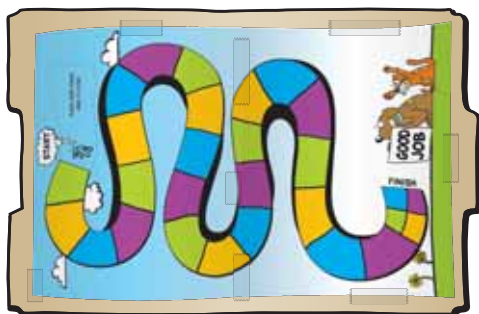
Directions:
For best results, print on card stock and cut out characters.



Cut slit length of line only



Slide one cut slit into the other to form an "X" shape so the marker will stand.

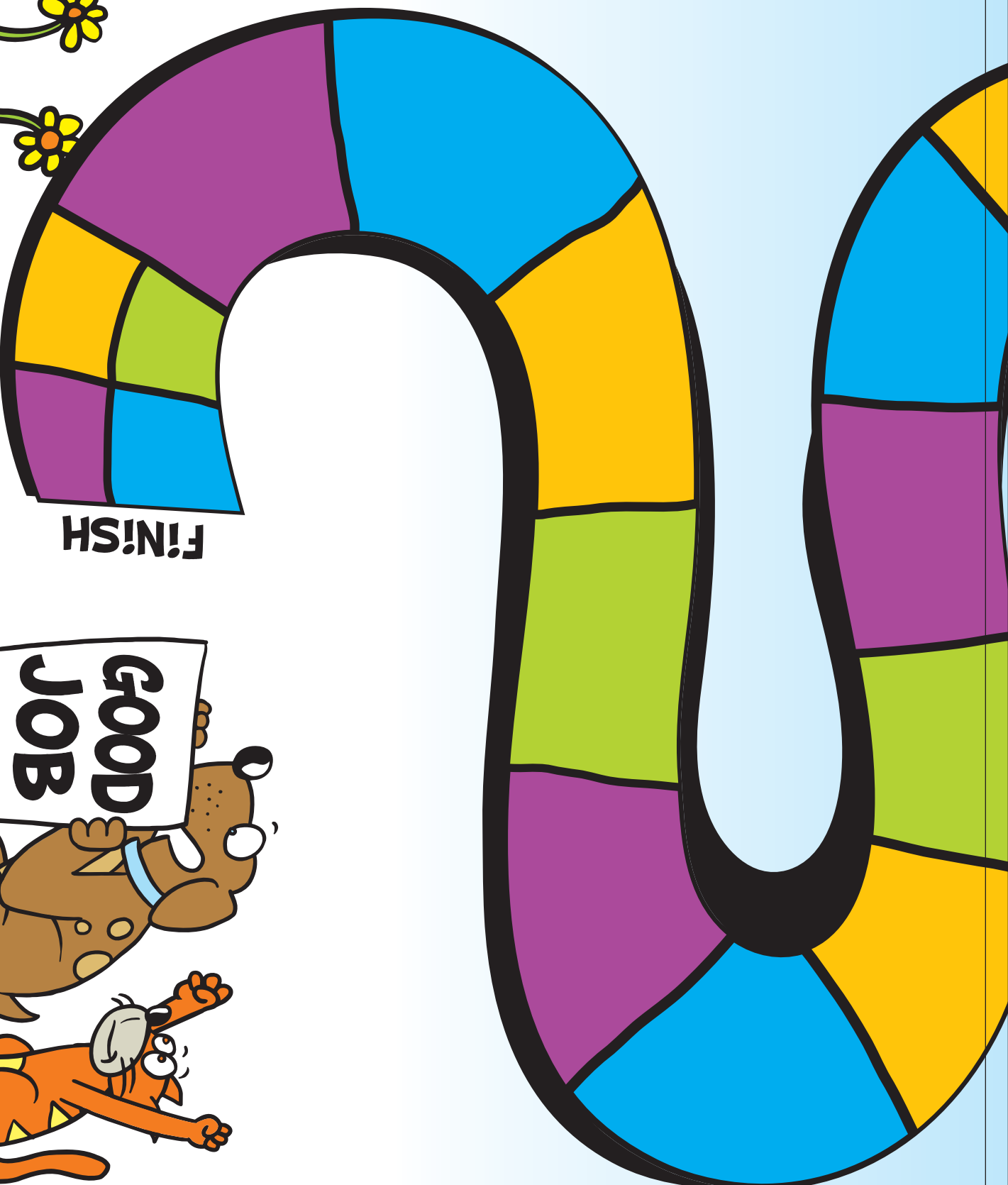


Directions:
Game board size is 11" x 17". Tape game board top and bottom into a manila file folder.
That way you can just fold it up with the cards and markers to store for later use.



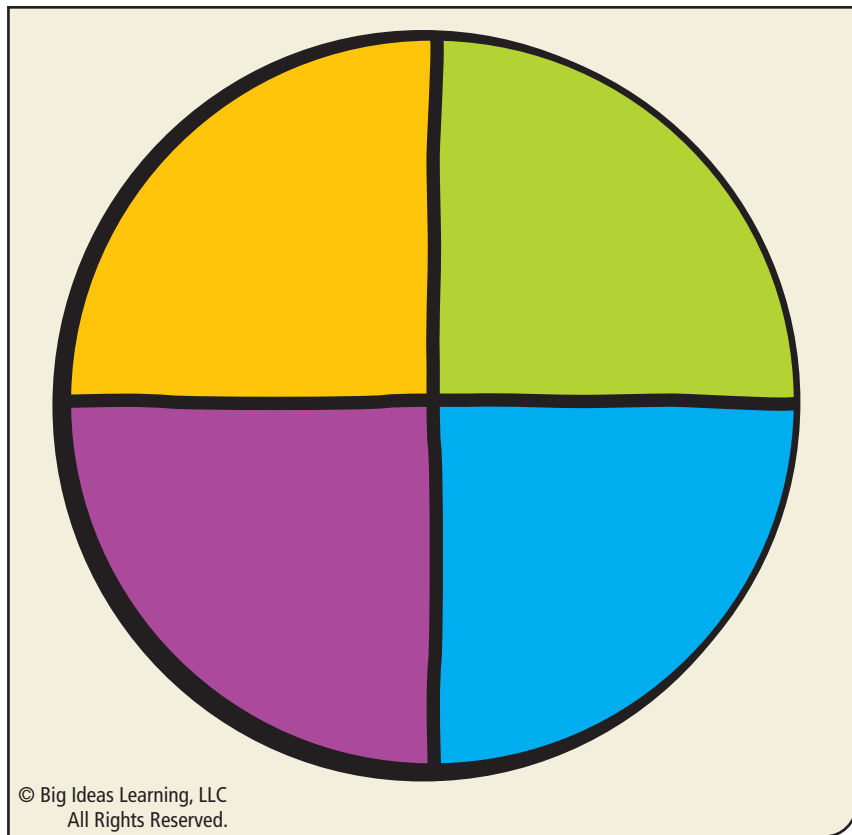
START

PLACE GAME PIECES
HERE TO START



F!N!SH





For best results, use a hole punch to make a hole in the center of the spinner before inserting a .5" brass fastener. If fasteners are not available, you can use an unbent paperclip as a spinner.

Red Book Review Game Solutions
****for teachers only****

EXPRESSIONS

E1	17
E2	$13 \cdot n$
E3	$1\frac{1}{2}$
E4	2
E5	16
E6	\$129.60
E7	10
E8	$5a - 15$
E9	8
E10	$3\frac{5}{6}$
E11	$7.25h$
E12	2.5
E13	$3\frac{3}{20}$
E14	$m + 15$
E15	11
E16	$5\frac{1}{3}$
E17	1
E18	\$8.50
E19	205
E20	$3(n + 2)$

EQUATIONS

Q1	$x = 12$
Q2	$n + 15 = 23$
Q3	$y = 11$
Q4	$y = 3x$
Q5	$p = 9$
Q6	$a \div 7 = 12$
Q7	$a = 28$
Q8	$y = x + 2$
Q9	$m = 8$
Q10	$p - 5 = 30$
Q11	$x = 5.2$
Q12	$b = 5.5$
Q13	$b = 22$
Q14	$6m = 24$
Q15	$y = 2\frac{1}{3}$ or $\frac{7}{3}$
Q16	$m = 4.2$
Q17	$y = 14$
Q18	$25 = \frac{1}{4}y$
Q19	$c = 2$
Q20	$x = 6$

PERCENTS

P1	1.64, $1\frac{16}{25}$
P2	30
P3	\$8.05
P4	5.4
P5	0.002, $\frac{1}{500}$
P6	80
P7	0.3125, 31.25%
P8	45 students
P9	0.15, 15%
P10	21
P11	$\frac{17}{25}$
P12	$\frac{7}{20}$, 35%
P13	1.375, 137.5%
P14	19.2
P15	0.18, $\frac{9}{50}$
P16	\$4.70
P17	28%, $\frac{7}{25}$
P18	0.25
P19	\$5.02
P20	6%, 0.062, $\frac{61}{100}$

GEOMETRY

G1	88 in.
G2	8 in.
G3	12 mm
G4	$6x - 4$
G5	18 ft
G6	10 m
G7	314 ft ²
G8	3.72 in. ²
G9	$4\frac{1}{6}$ ft ²
G10	288 in. ³
G11	$5x + 15$
G12	264 mi
G13	28.26 cm ²
G14	154 mm ²
G15	5 yd
G16	8 mm
G17	78.5 yd ²
G18	10 in.
G19	21 m
G20	24 cm ²

EXPRESSIONS

E1

Evaluate $3x - 4$ when $x = 7$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E3

Simplify $2\frac{1}{3} \div 1\frac{5}{9}$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E2

Write the phrase as an expression.
the product of 13 and a
number n

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E4

Simplify $\frac{3}{4} + \frac{5}{6} \div \frac{2}{3}$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

E2: 13 • n

E1: 17

E4: 2

E3: $1\frac{1}{2}$

EXPRESSIONS

E5

Evaluate $x^2 + y$ when $x = 3$
and $y = 7$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E7

Simplify $\frac{5}{6} \times 12$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E6

Your monthly cell phone bill is
\$32.40. How much do you owe
after 4 months of service?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E8

Use the Distributive Property
to simplify $5(a - 3)$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

E6: \$129.60

E5: 16

E8: 50 - 15

E7: 10

EXPRESSIONS

E9

Evaluate $36 \div a + b$ when
 $a = 9$ and $b = 4$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E11

You earn \$7.25 per hour at
your summer job. Write an
expression for the amount of
money you earn in h hours.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E10

Simplify $2\frac{3}{10} \times 1\frac{2}{3}$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E12

Evaluate the expression $a \div b$
when $a = 7.75$ and $b = 3.1$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

E10: $3\frac{5}{6}$

E9: 8

E12: 2.5

E11: 7.25h

EXPRESSIONS

E13

Simplify $1\frac{2}{5} \div \frac{4}{9}$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E15

Find the mean number of text messages.

Text Messages				
18	5	3	8	
21	15	7	11	

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E14

Write the phrase as an expression.

fifteen more than a number m

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E16

Simplify $8 \div 1\frac{1}{2}$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

E14: $m + 15$

E13: $3\frac{3}{20}$

E16: $5\frac{1}{3}$

E15: 11

EXPRESSIONS

E17

What is the value of the expression $7x + 2y - 3w$ when $x = 1$, $y = 0$, and $w = 2$?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E19

Simplify $4.1 \div 0.02$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E18

Five tickets to the movies costs \$42.50. What is the cost of one ticket?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EXPRESSIONS

E20

Write the phrase as an expression.
the product of 3 and the sum of a number n and 2

Race to the Finish • Red Book
© Big Ideas Learning, LLC

E18: 48.50

E17: 1

E20: 3 (n + 2)

E19: 205

PERCENTS

P1

Write 164% as a decimal and as a fraction in simplest form.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P3

An online clothing store charges 10% of your total bill for shipping. How much is shipping if you spend \$80.46?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P2

Use a fraction to find 75% of 40.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P4

What is 15% of 36?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

P2: 30

P1: 1.64, $1\frac{16}{25}$

P4: 5.4

P3: \$8.05

PERCENTS

P5

Write 0.2% as a decimal and as a fraction in simplest form.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P7

Write $\frac{5}{16}$ as a decimal and as a percent.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P6

What is 125% of 64?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P8

At your school, 15% of the students are left-handed. If there are 300 students in your school, about how many are left-handed?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

P6: 80

P5: 0.002, $\frac{1}{500}$

P8: 45 students

P7: 0.3125, 31.25%

PERCENTS

P9

Write $\frac{3}{20}$ as a decimal and as a percent.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P11

If 68% of your song is downloaded, what fraction of your song is downloaded?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P10

What is 30% of 70?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P12

Write 0.35 as a fraction and a percent.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

P10: 21

P9: 0.15, 15%

P12: $\frac{7}{20}$, 35%

P11: $\frac{17}{25}$

PERCENTS

P13

Write the mixed number $1\frac{3}{8}$
as a decimal and a percent.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P15

Write 18% as a decimal and
a fraction in simplest form.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P14

What is 24% of 80?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P16

If you leave your server a 20% tip
on a meal that costs \$23.50, how
much do you leave for a tip?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

P14: 19.2

P13: 1.375, 137.5%

P16: \$4.70

P15: 0.18, $\frac{9}{50}$

PERCENTS

P17

Write the decimal 0.28 as a percent and a fraction in simplest form.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P19

You want to give a taxi driver a 20% tip. How much should you tip the driver if the fare is \$25.10?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P18

What is 0.5% of 50?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

PERCENTS

P20

Order the numbers $\frac{61}{100}$, 6%, and 0.062 from least to greatest.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

P18: 0.25

P17: 28%, $\frac{7}{25}$

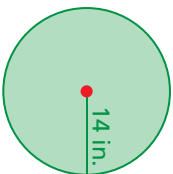
P20: 6%, 0.062, $\frac{61}{100}$

P19: \$5.02

GEOMETRY

G1

Use the formula $C = 2\pi r$ and $\pi \approx \frac{22}{7}$ to find the circumference of the circle.



Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G3

The perimeter of a square is 48 millimeters.

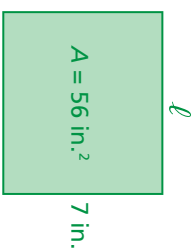
What is the length of one side?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G2

Use the formula $A = \ell w$ to find the length of the rectangle.

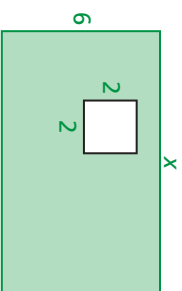


Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G4

Write a formula for the area of the shaded region in terms of x .



Race to the Finish • Red Book
© Big Ideas Learning, LLC

G2: 8 in.

G1: 88 in.

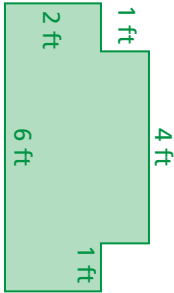
G4: 6X - 4

G3: 12 mm

GEOMETRY

G5

Find the perimeter of the figure shown.

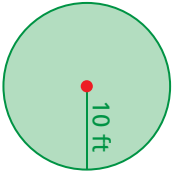


Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G7

Use the formula $A = \pi r^2$ and $\pi \approx 3.14$ to find the area of the circle.

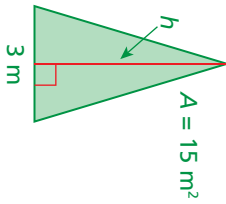


Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G6

Find the height of the triangle.

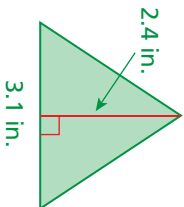


Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G8

Use the formula $A = bh \div 2$ to find the area of the triangle.



Race to the Finish • Red Book
© Big Ideas Learning, LLC

G6: 10 m

G5: 18 ft

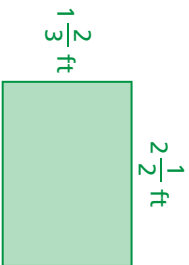
G8: 3.72 in.²

G7: 314 ft²

GEOMETRY

G9

Use the formula $A = \ell w$ to find the area of the rectangle.



Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G11

Use the Distributive Property to write and simplify an expression for the area of the rectangle.



Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G10

Use the formula $V = \ell wh$ to find the volume of the shipping box.

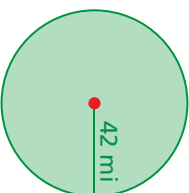


Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G12

Use the formula $C = 2\pi r$ and $\pi \approx \frac{22}{7}$ to find the circumference of the circle.



Race to the Finish • Red Book
© Big Ideas Learning, LLC

G10: 288 in.³

G9: $4\frac{1}{6}$ ft²

G12: 264 mi

G11: $5x + 15$

GEOMETRY

G13

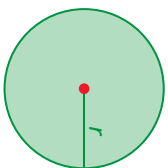
What is the area of a circle with a diameter of 6 cm?
(Use $\pi \approx 3.14$.)

Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G15

Use the formula $C = 2\pi r$ and $\pi \approx 3.14$ to find the radius of the circle.



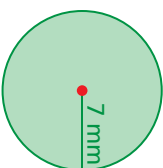
$$C = 31.4 \text{ yd}$$

Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G14

Use the formula $A = \pi r^2$ and $\pi \approx \frac{22}{7}$ to find the area of the circle.

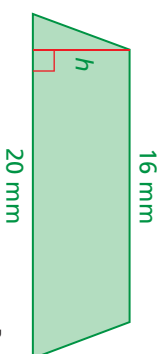


Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G16

Use the formula $A = h(b + B) \div 2$ to find the height of the trapezoid.



$$A = 144 \text{ mm}^2$$

Race to the Finish • Red Book
© Big Ideas Learning, LLC

G14: 154 mm²

G13: 28.26 cm²

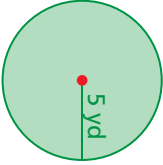
G16: 8 mm

G15: 5 yd

GEOMETRY

G17

Use the formula $A = \pi r^2$ and $\pi \approx 3.14$ to find the area of the circle.

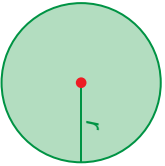


Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G19

Use the formula $C = 2\pi r$ and $\pi \approx \frac{22}{7}$ to find the radius of the circle.



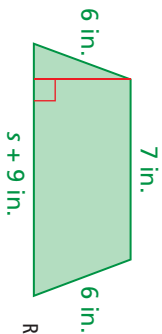
$$C = 132 \text{ m}$$

Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G18

What is the value of s if the perimeter of the trapezoid is 38 inches?

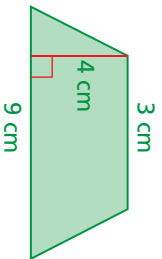


Race to the Finish • Red Book
© Big Ideas Learning, LLC

GEOMETRY

G20

Use the formula $A = h(b + B) \div 2$ to find the area of the trapezoid.



Race to the Finish • Red Book
© Big Ideas Learning, LLC

G18: 10 in.

G17: 78.5 yd²

G20: 24 cm²

G19: 21 m

EQUATIONS

Q1

Solve $x + 3 = 15$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q3

What is the value of $y = 2x + 7$
when $x = 2$?

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q2

Write the word sentence as
an equation.

The sum of a number n and
15 is 23.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q4

Write an equation for the
function shown in the table.

x	1	2	3	4	5
y	3	6	9	12	15

Race to the Finish • Red Book
© Big Ideas Learning, LLC

Q2: $n + 15 = 23$

Q1: $x = 12$

Q4: $y = 3x$

Q3: $y = 11$

EQUATIONS

Q5

Solve $4 + p = 13$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q7

Solve $\frac{q}{4} = 7$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q6

Write the word sentence as an equation.

The quotient of a number a and 7 is 12.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q8

Write an equation for the function shown in the table.

x	1	2	3	4	5
y	3	4	5	6	7

Race to the Finish • Red Book
© Big Ideas Learning, LLC

Q6: $a \div 7 = 12$

Q5: $p = 9$

Q8: $y = x + 2$

Q7: $a = 28$

EQUATIONS

Q9

Solve $18 = m + 10$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q11

Solve $3.5x = 18.2$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q10

Write the word sentence as
an equation.

The number p decreased by
 5 is 30 .

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q12

Solve $4b - 3 = 19$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

Q10: $p - 5 = 30$

Q9: $m = 8$

Q12: $b = 5.5$

Q11: $x = 5.2$

EQUATIONS

Q13

Solve $b - 9 = 13$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q15

What is the value of

$$y = \frac{1}{3}x + \frac{2}{3} \text{ when } x = 5?$$

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q14

Write the word sentence as an equation.

The product of 6 and a number m is 24.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q16

Solve $\frac{m}{2} + 4.1 = 6.2$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

Q14: $6m = 24$

Q13: $b = 22$

Q16: $m = 4.2$

Q15: $y = 2\frac{1}{3}$ or $\frac{7}{3}$

EQUATIONS

Q17

Solve $7 = y - 7$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q19

Solve $24c - 5 = 43$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q18

Write the word sentence as an equation.

25 is one-fourth of a number y .

Race to the Finish • Red Book
© Big Ideas Learning, LLC

EQUATIONS

Q20

Solve $15 + \frac{x}{3} = 17$.

Race to the Finish • Red Book
© Big Ideas Learning, LLC

Q18: $25 = \frac{1}{4}y$

Q17: $y = 14$

Q20: $x = 6$

Q19: $c = 2$