PRE-ALGEBRA

MATHEMATICS PARENT GUIDE

THE FOLLOWING ARE SPECIFIC SKILLS STUDENTS NEED TO ACQUIRE BY THE END OF PRE-ALGEBRA:

NUMBER SENSE

- Students in Pre-Algebra understand relationships among positive and negative numbers and fractions. They compute fluently and simplify expressions. They solve problems involving fractions and percents.

Examples: $-\frac{1}{2}+\frac{2}{3}$ $\quad |-3^2|$

PROPORTIONAL REASONING

- Students solve problems involving ratios, percents, decimals, and similar polygons using proportional reasoning. They begin to understand the meaning of slope.

Examples: Find 6% of 25. $\quad \frac{2}{3}=\frac{x}{15}$

ALGEBRA

- Students express patterns using tables, graphs, and symbols. They evaluate and simplify expressions and solve equations and inequalities. They graph ordered pairs and lines.

Examples: $2x + 3x$ $\quad 2x + 5 = 7x - 3$ $\quad$ Graph: $2x + 3y = 6$

GEOMETRY AND MEASUREMENT

- Students relate their skills in proportional reasoning to geometry by solving problems involving scale factors and unit conversion. They compute surface areas and volumes for right prisms and cylinders.

Examples: Find the amount of paint needed to paint a cube.

Measure a soda can and calculate its volume.

PROBABILITY AND STATISTICS

- Students calculate simple probabilities and compare theoretical and experimental probability. They display data graphically and use the graphs to answer questions.

Examples: What is the probability of flipping a coin twice and getting two heads?

MATH PARENT GUIDE

Mathematics Parent Guide (Continued)

Number Sense

$$-\frac{1}{2}+\frac{2}{3}=\left(\frac{3}{3}\right)\left(\frac{-1}{2}\right)+\left(\frac{2}{2}\right)\left(\frac{2}{3}\right)=$$

$$\left(\frac{-3}{6}\right)+\left(\frac{4}{6}\right)=\left(\frac{1}{6}\right)$$

$$\left|-3^2\right| = \left|-9\right| = 9$$

Proportional Reasoning

Find 6% of 25:

$$\frac{6}{100}\times 25=\frac{150}{100}=\frac{3}{2}$$

OR

$$.06\times 25 = 1.5$$

$$\frac{2}{3}=\frac{x}{15}$$

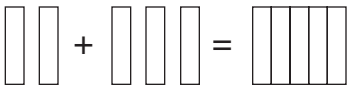
$$2(15)=3x$$

$$\left(\frac{2(15)}{3}\right)=\frac{3x}{3}$$

$$10=x$$

Algebra

$$2x+3=5x$$



$$2x+5=7x-3$$

$$2x+5\underline{-5}=7x-3\underline{-5}$$

$$2x=7x-8$$

$$2x\underline{-7x}=7x\underline{-7x}-8$$

$$\underline{-5x}=-8$$

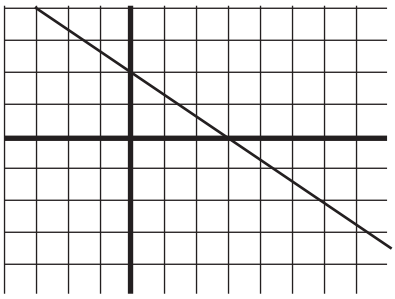
$$\frac{-5x}{-5}=\frac{-8}{-5}$$

$$x=\frac{8}{5}$$

Graph:

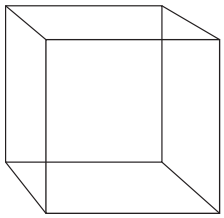
$$2x+3y=6$$

x	y
0	2
3	0
6	-2



Geometry and Measurement

Find the amount of paint needed to paint a cube if each side measures 3cm. The area of one side = 9cm^2. Total area = 54cm^2

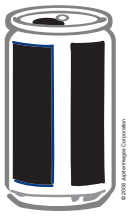


Measure a soda can and calculate its volume. The radius = 2 inches.

The height = 6 inches.

Volume =

$2^2\pi(6)=24\pi\approx 75$ in^3



Probability and Statistics

What is the probability of flipping a coin twice and getting two heads?

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