Algebra 1 : Are You Ready

1/ Arithmetic

(1) $3 \cdot (5-2) + 8 - 2 \cdot (4+2) = ?$

(2) $(12 + 18) \div 3 - (12 \div 3 + 18 \div 3) = ?$

(3) $5^2 \cdot 2^2 - 5 \cdot 2^2 - 2 \cdot 5^2 = ?$

(4) $(-2)^2 - 2^2 = ?$

(5) $(-3)^3 - 3^3 = ?$

2/ Fractions

(1) $\dfrac{11}{23} + \dfrac{12}{23} - \dfrac{13}{23} = ?$

(2) $\dfrac{1}{2} + \dfrac{1}{3} = ?$

(3) $\dfrac{1}{2} - \dfrac{1}{3} + \dfrac{1}{4} = ?$

(4) $\dfrac{1}{2} \times \dfrac{2}{3} - \dfrac{2}{7} = ?$

(5) $\dfrac{1}{2} \div \dfrac{1}{3} + \dfrac{3}{4} = ?$

3/ Decimals and Percents

(1) $13.9 + 2.11 =$

(2) $0.135 - 0.28 =$

(3) $2.54 \times 1.2 =$

(4) $0.48 \div 0.6 =$

(5) $1 \div (0.2)^2 =$

(6) $1000 \times 60\% \times 50\% =$

(7) $8 \div 16\% =$

(8) Convert $\dfrac{2}{19}$ to a decimal

(9) Convert 0.012 to a percent

(10) Convert 3.14 to a fraction

4. Powers and Roots

(1) $(-1)^3 = ?$

(2) $4^4 = ?$

(3) $\sqrt{121} =$

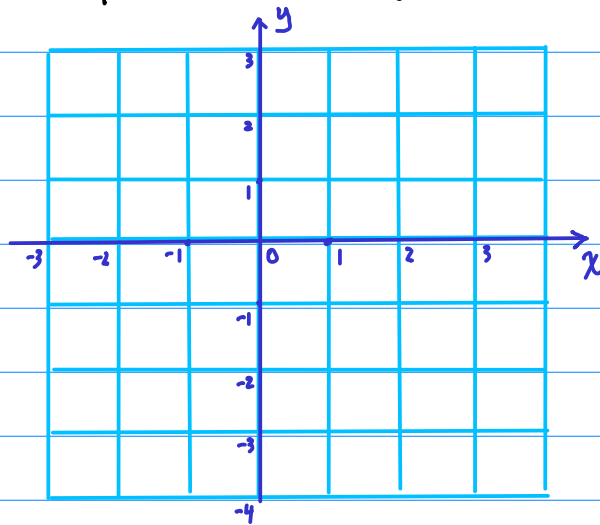(4) $\sqrt[3]{64} =$

(5) $\sqrt[5]{-1} =$

5. Ratios, Proportions and Rates

(1) The ratio of apples to oranges in a basket is 4 to 5. If the total number of all apples and oranges in the basket is 117, then how many oranges are in the basket.

(2) The distance of 1 inch of a city map corresponds the real distance of 5 miles in the city. If two stores on the map are $3\frac{1}{2}$ inches apart, how far apart are they in the city?

(3) A car travels 1 miles every 60 seconds. How far does the car travel in 2 hours?

6. Plot the points on the grid.
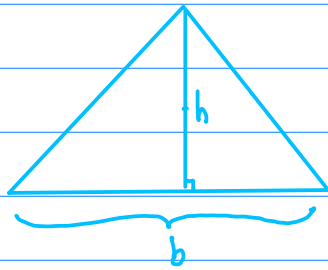

(1) $(0, -2)$
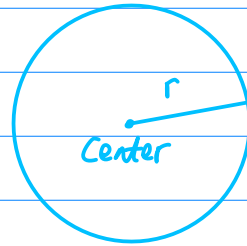
(2) $(2.5, 0)$

(3) $(1, -4)$

(4) $(-1.5, 3)$

(5) $(-2, -3)$

7/ Problem Solving

(1) $-1 + 2 - 3 + 4 - 5 + 6 - 7 + \cdots - 99 + 100 = ?$

(2) Two-fifths of the students in a class are boys.
One half of the boys have black hair.
Two-thirds of the girls in the class have black hair.
What fraction of the students in the class have black hair.

(3) A bath tub has two faucets. The bath tub can
be filled by one fauct in 2 minutes, and by
the other in 3 minutes. How long does it take
to fill the bath tub if both faucets are used?

(4) A rectangular floor that has the length of 18 feet
and width 15 feet is to be covered by square
tiles. If each square tile has the side of 0.5 foot,
how many tiles are needed?

(5) Write down the formulas for areas.

Area = _____

Area = _____