

Name: _____

Date: _____

Commonwealth Academy
Pre-Algebra (FFA 2)
Summer Math Packet

Use the laws of exponents to simplify the following problems.

a) $x^{30} \div x^{26}$

b) $(x^6)^2$

c) $(y^2)^8$

d) $(x^2)^5$

e) $\frac{x^5}{x^3}$

f) $(x \cdot y)^3$

g) $(x^2 \cdot y^3)^4$

h) $(3x)^4$

Copy and complete the table below.

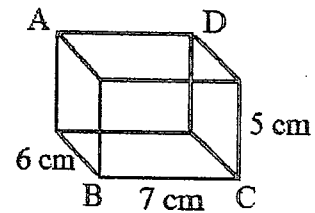
STANDARD FORM	SCIENTIFIC NOTATION
73,000,000,000,000,000,000	
890,000,000,000,000	$1.3 \cdot 10^{-13}$
5,430,000,000,000,000,000,000	
0.0000014	$2.95 \cdot 10^{-19}$ $2.0 \cdot 10^4$



Copy and complete the chart of these cubed numbers.

	Exponent Form	Factored Form	Standard Form
a)	4^3	$4 \cdot 4 \cdot 4$	64
b)	2^3		
c)		$7 \cdot 7 \cdot 7$	
d)			125
e)			216
f)		$8 \cdot 8 \cdot 8$	

Find the volume of this prism when the dimensions are enlarged by a scale factor of 3.

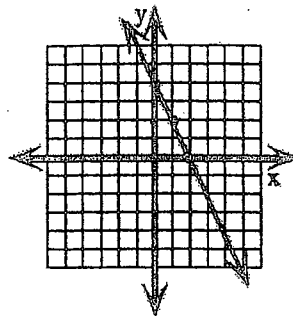


For each table or graph, determine the slope or rate of change.

a)

x	-6	-3	0	3	6
y	-2	1	3	5	7

b)

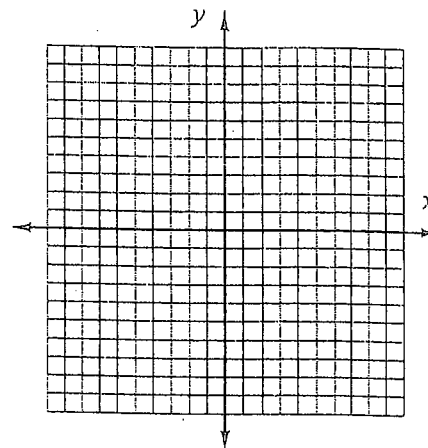
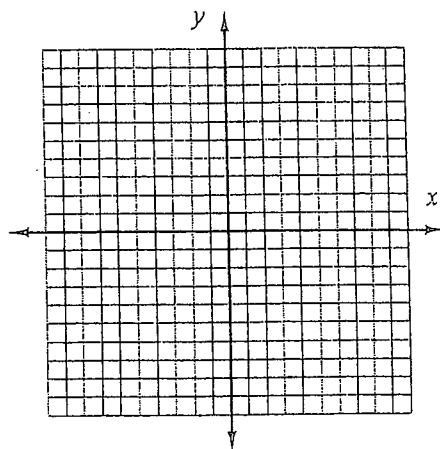
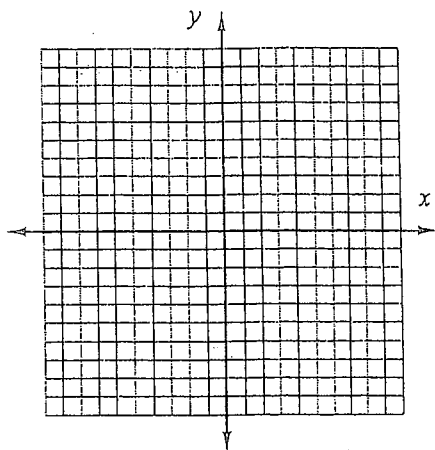


For each equation, determine the slope and y-intercept and draw a graph.

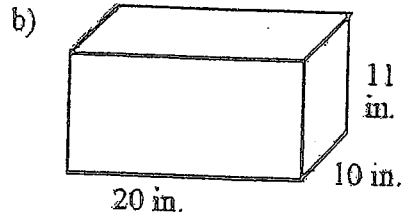
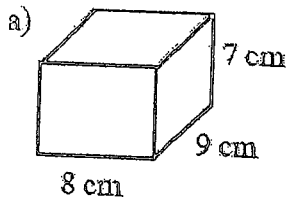
a) $y = \frac{3}{4}x - 2$

b) $y = -2x + 3$

c) $y = \frac{1}{2}x$



Calculate the volume of each figure.



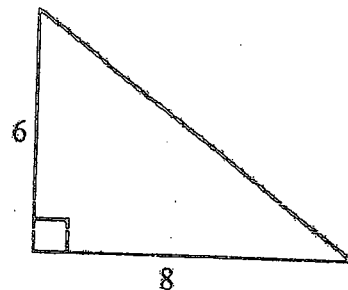
Show work to support each answer. Answer in complete sentences.

- 9 is what % of 108?
- The snack bar buys candy bars for 38 cents. How much should they charge if they have a mark-up rate of 40%?
- A tank top decreased in price from \$12.50 to \$10.50. What percentage decrease is this?
- First class trophies cost \$8.25. What is the total cost if there is 7.5% sales tax?
- Larkfield's population grew from 11,567 to 28,760 in fifteen years. By what percentage did the population increase?
- Find the sales price and the amount saved on an item that costs \$25.75 and is 35% off.

Solve for x: $\frac{11}{22} = \frac{x}{2}$

Enlarge the triangle at right so that the sides are three times as long.

- What is the new perimeter?
- What is the new area?
- What is the simplified ratio $\frac{\text{new perimeter}}{\text{old perimeter}}$?
- What is the simplified ratio $\frac{\text{new area}}{\text{old area}}$?



Solve for the given variable.

a) $P = 2h + 2w$ (solve for w)

b) $y = mx + b$ (solve for m)

Show all your work as you simplify each expression below.

a) $3 \cdot 8 - 35 \div 7$

b) $2^2 \cdot 16 - 5 + 18 \div 3$

c) $(2 \cdot 3 - 1)^2 + 10$

d) $2(3 + 4) + (15 \div 3)(2 + 3 \cdot 2)$

Simplify the following.

a) $x(x - 3 + a)$

b) $100(x - 25)$

c) $3x(-4x + 6)$

d) $-2x(x + 2) - 5x^2$

Fill in the table below with the two missing forms of each number.

	Fraction	Decimal	Percent
a)	$\frac{3}{25}$		
b)	$\frac{53}{100}$		53%
c)	$\frac{13}{19}$		
d)	$\frac{267}{1000}$	0.267	

Jay recorded the following temperatures in Ankitville:

45, 65, 33, 78, 89, 88, 67, 65, 75, 75, 80.

a) Find their mean.

b) Find their median.

c) Make a stem-and-leaf plot from the

