

1. Solve for y. Write in slope intercept form: $y = mx + b$

a) $3y = \frac{12x - 9}{3}$
 $y = 4x - 3$

b) $2y = \frac{4x + 10}{-2}$
 $y = -2x - 5$

c) $y + \frac{1}{2}x = 6$
 $y = -\frac{1}{2}x + 6$

d) $6y - 2x = 24$
 $6y = \frac{2x + 24}{6}$
 $y = \frac{1}{3}x + 4$

e) $4x + 8y = 16$
 $8y = \frac{-4x + 16}{8}$
 $y = -\frac{1}{2}x + 2$

f) $-y - 7 = 3x$
 $-y = \frac{3x + 7}{-1}$
 $y = -3x - 7$

g) $5y = \frac{2x + 30}{5}$
 $y = \frac{2}{5}x + 6$

h) $-7y = \frac{-7x - 14}{-7}$
 $y = x + 2$

i) $35x - 70y = 140$
 $-70y = \frac{-35x + 140}{-70}$
 $y = \frac{1}{2}x - 2$

j) $16y + 32 = -4x$
 $16y = \frac{-4x - 32}{16}$
 $y = -\frac{1}{4}x - 2$

k) $50y = \frac{100x - 250}{50}$
 $y = 2x - 5$

2. Write in scientific notation.

a) $432,000$
 4.32×10^5

b) $5,170$
 5.17×10^3

c) $968,000,000$
 9.68×10^8

d) 123
 1.23×10^2

e) 0.0014
 1.4×10^{-3}

f) 0.022
 2.2×10^{-2}

g) 0.000000039
 3.9×10^{-8}

h) 0.877
 8.77×10^{-1}

3. Write in standard form.

a) 2.6×10^6
 2600000

b) 1.37×10^4
 13700

c) 5.4×10^3
 5400

d) 7.777×10^7
 77770000

e) 1.78×10^{-5}
 $.0000178$

f) 9.6×10^{-4}
 $.00096$

g) 4.58×10^{-7}
 $.000000458$

h) 3.22×10^{-6}
 $.00000322$

4. Perform the indicated operation.

a) $(3.4 \times 10^5) + (1.2 \times 10^4)$
 $352000 = 3.52 \times 10^5$

b) $(1.98 \times 10^3) + (5.7 \times 10^2)$
 $2550 = 2.55 \times 10^3$

c) $(7.65 \times 10^{-2}) + (6.02 \times 10^{-1})$
 $0.6785 = 6.785 \times 10^{-1}$

d) $(8.8 \times 10^{-3}) + (5.5 \times 10^{-4})$
 $0.00935 = 9.35 \times 10^{-3}$

e) $(2.46 \times 10^6) - (1.03 \times 10^6)$
 $1430000 = 1.43 \times 10^6$

f) $(7.9 \times 10^5) - (3.22 \times 10^4)$
 $757800 = 7.578 \times 10^5$

g) $(4.1 \times 10^{-4}) - (2.6 \times 10^{-5})$
 $0.000384 = 3.84 \times 10^{-4}$

h) $(5.67 \times 10^{-3}) - (3.4 \times 10^{-6})$
 $0.0566966 = 5.66966 \times 10^{-2}$

i) $(2.4 \times 10^6)(1.3 \times 10^5)$
 3.12×10^{11}

j) $(7.25 \times 10^4)(4.4 \times 10^4)$
 3.19×10^9

k) $(3.67 \times 10^{-5})(1.4 \times 10^{-3})$
 5.138×10^{-8}

l) $(8.1 \times 10^{-6})(6 \times 10^{-5})$
 4.86×10^{-10}

m) $(1.44 \times 10^{10}) \div (1.2 \times 10^4)$
 1.2×10^6

n) $(2.8 \times 10^7) \div (1.4 \times 10^2)$
 2×10^5

o) $(3.69 \times 10^6) \div (3 \times 10^{-4})$
 1.23×10^{10}

p) $(5.65 \times 10^{-3}) \div (5 \times 10^{-7})$
 1.13×10^4

5. A TV show had 3.5×10^6 viewers for their first episode and 8.5×10^6 viewers for their second episode. How many viewers did they have overall?

$12,000,000 = 1.2 \times 10^7$

add

6. In 2013 the Los Angeles Dodgers opening day payroll was about $\$2.16 \times 10^8$ and the Houston Astros opening day payroll was about $\$2.4 \times 10^7$. How much higher was the Dodgers' payroll?

$192,000,000 = 1.92 \times 10^8$

subtract

7. The population of Crowded Tom is 4×10^6 and the population of Empty Village is 8×10^3 . How many times the population of Empty Village is Crowded Town?

divide

$500 = 5.0 \times 10^2$

8. A corporation earned a profit of $\$2.5 \times 10^4$ for 1×10^3 days in a row. What was the corporation's total profit during this time period?

add

$26,000 = 2.6 \times 10^4$

9. In 2012, the population of New York State (NY) was about 2×10^7 and the population of the State of Oregon (OR) was about 4×10^7 .

A. How many times the population of OR is NY?

divide

2
 ~~0.5~~ ~~5×10^7~~

B. How many more people live in NY than OR?

subtract

switch

$2,000,000,000 = 2 \times 10^9$