

1. The relationship between two variables is given in the table below. Is this relationship proportional? If so, what is the constant of proportionality?

You can plot the points with coordinates (x, y) .

a.

x	9	15	33	45	66
y	3	5	11	15	22

b.

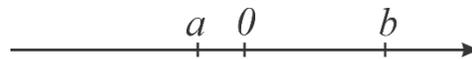
x	3	2	5	4	6
y	9	4	25	16	36

c.

x	3	2	1	$\frac{1}{3}$	30
y	1	$\frac{3}{2}$	3	9	0.1

2. * Write a 4-digit number, each digit 1 more than the previous digit (like 2345). Then write the 4-digit number with the same digits but in opposite order (like 5432). Subtract the smaller number from the greater one. Do it two more times using different digits. What did you notice? Can you explain it?
3. Anna drove her car 345 miles and used 15 gallons of gasoline. At the same rate, how many miles could she drive her car using 35 gallons of gasoline? Set up and solve a proportion.
4. A dog weighs 2 pounds more than a cat. 3 cats and 4 dogs together weigh 43 pounds. How much does a dog weigh? A cat?
5. Points a and b are marked on a coordinate line. Compare:

a. $a + b \dots 0$; b. $a - b \dots 0$; c. $ab \dots 0$; d. $\frac{b}{a} \dots 1$



6. Evaluate:

a. $5 \cdot (-3)^3 + 7$

b. $-2 \cdot (-1.1)^2 + 15$

c. $10 - 7 \cdot (-2)^7$

d. $-20 - 10 \cdot (-0.1)^2$;

e. $7 \cdot (-1)^3 - 4 \cdot (-1)^2 - 8$;

f. $-10 \cdot (-0.3)^2 - 5 \cdot (-0.3) + 1$;

7. Given that $(28)^2 = 784$ find the value of

$(-28)^2$;

-28^2 ;

$-(-28)^2$;

$-(-(-28)^2)$;

$-(-(28))^2$;

8. Use the distributive property and simplify fractions:

a. $\frac{15 \cdot 9 - 15 \cdot 6}{9 \cdot 30}$; b. $\frac{17 \cdot 4 + 17 \cdot 9}{34 \cdot 52}$; c. $\frac{18 \cdot 7 + 18 \cdot 3}{1200}$; d. $\frac{24 \cdot 11 - 24 \cdot 3}{300}$

