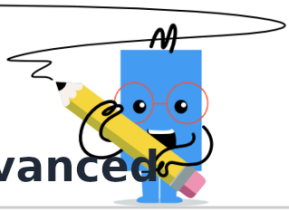
Name



Algebra Manipulating Variables - Advanced

1 Solve for the variable in the equation

$$\frac{m}{9} = 4$$

A $m = 39$	B $m = 33$
C $m = 36$	D $m = 38$
E $m = 34$	F $m = 37$

2 Solve for the variable in the equation

$$9r + 4 = 40$$

A $r = 7$	B $r = 4$
C $r = 5$	D $r = 1$
E $r = 2$	F $r = 6$

3 Solve for the variable in the equation

$$\frac{4n}{6} = 6$$

A $n = 6$	B $n = 7$
C $n = 12$	D $n = 10$
E $n = 9$	F $n = 11$

4 Solve for the variable in the equation

$$4p - 5 = 11 - 4p$$

A $p = 0$	B $p = 1$
C $p = 5$	D $p = 2$
E $p = 4$	F $p = 3$

5 Solve the fraction for 'x' in terms of the variables and reduce.

$$3a = \frac{x}{b}$$

A $x = 3a \cdot b$

B $x = \frac{3a}{b}$

C $x = \frac{b}{a}$

D $x = \frac{b}{3a}$

6 Solve the fraction for 'x' in terms of the variables and reduce.

$$4a = \frac{3x}{b}$$

A $x = \frac{b}{12a}$

B $x = \frac{4a \cdot b}{3}$

C $x = \frac{a}{12b}$

7 Solve the fraction for 'x' in terms of the variables and reduce.

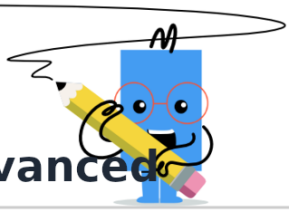
$$2a = \frac{3c}{x}$$

A $x = \frac{3a}{2c}$

B $x = \frac{c}{6a}$

C $x = \frac{3c}{2a}$

Name



Algebra Manipulating Variables - Advanced

8 Solve the fraction for 'x' in terms of the variables and reduce.

$$3a = \frac{c}{x}$$

A $x = \frac{c}{a}$

B $x = 3a \cdot c$

C $x = \frac{a}{3c}$

D $x = \frac{3a}{c}$

E $x = \frac{c}{3a}$

9 Solve the fraction for 'x' in terms of the variables and reduce.

$$2a = \frac{x}{e}$$

A $x = 2a \cdot e$

B $x = \frac{e}{a}$

C $x = \frac{2e}{a}$

D $x = \frac{a}{2e}$

10 Solve the fraction for 'x' in terms of the variables and reduce.

$$4a = \frac{3b}{x}$$

A $x = \frac{3b}{4a}$

B $x = \frac{b}{12a}$

C $x = \frac{4b}{3a}$

D $x = \frac{3a}{4b}$

E $x = \frac{b}{a}$

11 Which answer is the same expression as this

$$3(n+3)$$

A $3n-9$

B $3n+6$

C $3n-6$

D $3n+9$

E n^3+9

12 Solve for the variable in the equation

$$\frac{45}{4c-7} = 5$$

A $c=4$

B $c=5$

C $c=6$

D $c=3$

E $c=7$

F $c=2$

Name



Algebra Manipulating Variables - Advanced

13 Solve the fraction for 'x' in terms of the variables and reduce.

$$4a = \frac{4x}{2b}$$

A $x = 2a \cdot b$	B $x = \frac{a}{2b}$
C $x = \frac{b}{8a}$	D $x = \frac{b}{2a}$
E $x = \frac{b}{32a}$	

14 Which answer is the same expression as this

$$8(7m + 5)$$

A $56m + 8$	B $8m + 56$
C $m^8 + 40$	D $56m + 40$
E $8m - 56$	F $56m - 56$

15 Solve the fraction for 'x' in terms of the variables and reduce.

$$3a = \frac{4b}{2x}$$

A $x = \frac{3a}{8b}$	
B $x = \frac{2b}{3a}$	
C $x = 6a \cdot b$	
D $x = \frac{b}{a}$	

16 Which answer is the same expression as this

$$z(6 - y)$$

A $6z - zy$	B $zy - 6$
C $zy - z$	D $6y - 6z$
E $zy + 6$	F $z^2 + 6z$

17 Which answer is the same expression as this

$$b(8m + 7)$$

A $8bm - 7$	B $7b^2 + 7b$
C $7bm + 7$	D $8b^2 - 7b$
E $m^2 - 7b$	F $8bm + 7b$

18 Which answer is the same expression as this

$$p(p + 4)$$

A $p^2 - 4p$	B $p^2 + 4p$
C $2p + 4p$	D $2p^2 + 4p$
E $2p^2 - 4p$	F $p + 4$

Name

Algebra Manipulating Variables - Advanced

19 Solve the fraction for 'x' in terms of the variables and reduce.

$$2a = \frac{3b}{2x}$$

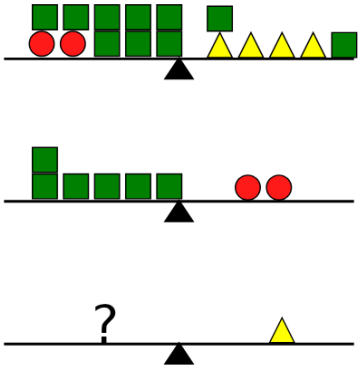
A $x = \frac{3a}{4b}$

B $x = \frac{b}{12a}$

C $x = 3a \cdot b$

D $x = \frac{3b}{4a}$

20 Which equation represents the solution to the bottom scale?



A $5t = t$

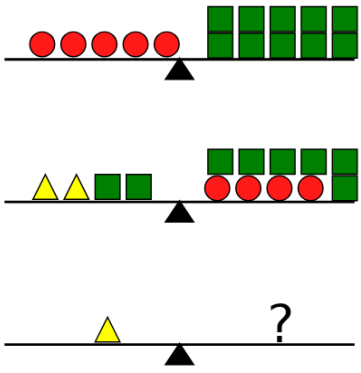
B $c + 2t = t$

C $c = t$

D $c + t = t$

E $c + 5t = t$

21 Which equation represents the solution to the bottom scale?



A $t = 6c + s$

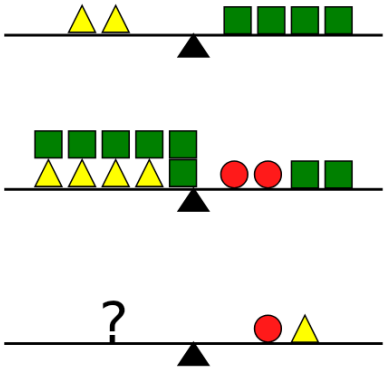
B $t = 6c$

C $t = 3c$

D $t = 4c$

E $t = 8c$

22 Which equation represents the solution to the bottom scale?



A $4t = c + t$

B $6t = c + t$

C $8t + s = c + t$

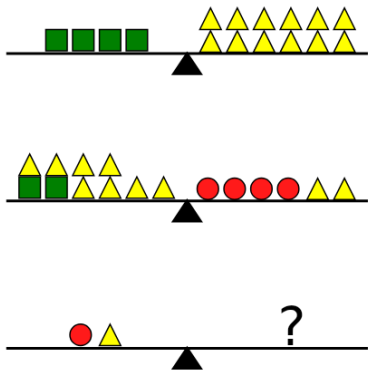
D $8t = c + t$

E $7t = c + t$

Name

Algebra Manipulating Variables - Advanced

23 Which equation represents the solution to the bottom scale?



A $c+t=4t$	B $c+t=6t$
C $c+t=t$	D $c+t=3t$
E $c+t=s+t$	

24 Which answer is the same expression as this

$$7r(r+5)$$

A $35r+5$	B $2r^2+5r$
C $12r+5$	D $7r^2+35r$
E $5r^2+35r$	F $2r+5r$

25 Which answer is the same expression as this

$$(q+6)(m+4)$$

A $qm+4m+10q+6$
B $qm+6m+4q+24$

26 Which answer is the same expression as this

$$(m+2)(y+7)$$

A $my+7y+9m+2$	B $my+2y+7m+14$
C $my+7y+2m+14$	D $2my+2y+7m+14$
E $2my+2y+7m+9$	

27 Which answer is the same expression as this

$$(w+5)(w+5)$$

A $w^2+10w+25$
B $10w^2+w+25$

28 Which answer is the same expression as this

$$(p+6)(5w+3)$$

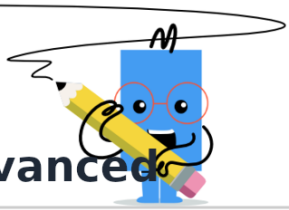
A $pw+30w+3p+6$	B $pw+6w+3p+30$
C $3pw+6w+3p+18$	D $5pw+3w+18p+6$
E $5pw+30w+3p+18$	F $pw+3w+30p+6$

29 Which answer is the same expression as this

$$(n-5)(n+8)$$

A $n^2-13n-40$	B $n^2-13n+40$
C $n^2+40n+13$	D $n^2+3n-40$
E $n^2+40n+40$	

Name



Algebra Manipulating Variables - Advanced

30 Which answer is the same expression as this

$$(6w+9)(x-6)$$

A $6wx-9x+6w-54$	B $wx+36x-6w+9$
C $6x-6w-54-wx$	D $wx+6x+36w+9$
E $6wx+9x-36w-54$	F $wx+9x+6w-36$

31 Which answer is the same expression as this

$$(m+6)(4m+7)$$

A $4m^2+31m+42$	B $m^2-42m+31$
C $m^2+42m+31$	D $31m^2+m+42$
E $4m^2+31m-42$	F $42m^2+31m+20$

32 Which pair of integers have the sum and product shown?

$$a+b=7$$
$$a\times b=12$$

A 2, 2	B -1, 8	C 3, 2
D 5, 5	E 3, 4	F -1, 1

33 Which answer is the same expression as this

$$(2m-7)(6m+4)$$

A $12m^2-34m-28$	B $12m^2-12m-28$
C $2m^2-28m+12$	D $28m^2+12m+15$
E $m^2+28m-12$	F $2m^2+28m+12$

34 Which pair of integers have the sum and product shown?

$$a+b=-8$$
$$a\times b=12$$

A 0, -5	B -3, -10
C -7, -2	D -5, -11
E -2, -6	F 2, -10

35 Which answer is the same expression as this

$$(q+2)^2$$

A q^2-4q+4
B q^2+4q+4

36 Which answer is the same expression as this

$$(t-8)^2$$

A $t^2-16t+64$	B $t^2+0t+64$
C $64t^2+16t+24$	D $16t^2-t+64$
E $t^2-64t+16$	