

Atelier sur la résolution des équations

Nom : Corrigé Groupe : _____

1. Résous les équations suivantes.

$$\begin{aligned} \text{a) } r - 12 &= -31 \\ +12 \quad +12 \\ \hline r &= -19 \end{aligned}$$

$$\underline{r = -19}$$

$$\begin{aligned} \text{b) } 3y + 5 &= 11 \\ -5 \quad -5 \\ \hline 3y &= 6 \\ \frac{3y}{3} &= \frac{6}{3} \\ y &= 2 \end{aligned}$$

$$\underline{y = 2}$$

$$\begin{aligned} \text{c) } 14 &= 4x - 6 \\ +6 \quad +6 \\ \hline 20 &= 4x \\ \frac{20}{4} &= \frac{4x}{4} \\ 5 &= x \end{aligned}$$

$$\underline{x = 5}$$

$$\begin{aligned} \text{d) } 2a + 5 &= -7 \\ -5 \quad -5 \\ \hline 2a &= -12 \\ \frac{2a}{2} &= \frac{-12}{2} \\ a &= -6 \end{aligned}$$

$$\underline{a = -6}$$

$$\begin{aligned} \text{e) } -9p - 14 &= 67 \\ +14 \quad +14 \\ \hline -9p &= 81 \\ \frac{-9p}{-9} &= \frac{81}{-9} \\ p &= -9 \end{aligned}$$

$$\underline{p = -9}$$

$$\begin{aligned} \text{f) } 12 &= -6x - 6 \\ +6 \quad +6 \\ \hline 18 &= -6x \\ \frac{18}{-6} &= \frac{-6x}{-6} \\ -3 &= x \end{aligned}$$

$$\underline{x = -3}$$

$$\begin{aligned} \text{g) } 21y + 43 &= 274 \\ -43 \quad -43 \\ \hline 21y &= 231 \\ \frac{21y}{21} &= \frac{231}{21} \\ y &= 11 \end{aligned}$$

$$\underline{y = 11}$$

$$\begin{aligned} \text{h) } -n - 5 &= -21 \\ +5 \quad +5 \\ \hline -n &= -16 \\ \frac{-n}{-1} &= \frac{-16}{-1} \\ n &= 16 \end{aligned}$$

$$\underline{n = 16}$$

$$\begin{aligned} \text{i) } 2(g - 2) + 5 &= 15 \\ 2g - 4 + 5 &= 15 \\ 2g + 1 &= 15 \\ 2g &= 14 \\ g &= 7 \end{aligned}$$

$$\underline{g = 7}$$

$$\begin{aligned} \text{j) } 2(x - 2) &= 6 \\ 2x - 4 &= 6 \\ +4 \quad +4 \\ \hline 2x &= 10 \\ \frac{2x}{2} &= \frac{10}{2} \\ x &= 5 \end{aligned}$$

$$\underline{x = 5}$$

$$\begin{aligned} \text{k) } -18 &= 3(y + 2) \\ -18 &= 3y + 6 \\ -6 \quad -6 \\ \hline -24 &= 3y \\ \frac{-24}{3} &= \frac{3y}{3} \\ -8 &= y \end{aligned}$$

$$\underline{y = -8}$$

$$\begin{aligned} \text{l) } 3(-a + 2) &= 9 \\ -3a + 6 &= 9 \\ -6 \quad -6 \\ \hline -3a &= 3 \\ \frac{-3a}{-3} &= \frac{3}{-3} \\ a &= -1 \end{aligned}$$

$$\underline{a = -1}$$

$$m) 4y - (y - 14) = 11$$

$$4y - y + 14 = 11$$

$$3y + 14 = 11$$

$$-14 \quad -14$$

$$\frac{3y}{3} = \frac{-3}{3}$$

$$y = -1$$

$$n) 6 \cdot \frac{n}{6} = \frac{-8}{1} \cdot 6$$

$$n = -48$$

$$n = -48$$

$$o) \frac{v}{4} + \frac{3}{1} = \frac{9}{1}$$

$$\frac{v}{4} + \frac{12}{4} = \frac{36}{4}$$

$$v + 12 = 36$$

$$-12 \quad -12$$

$$v = 24$$

$$v = 24$$

$$p) \frac{4(k-3)}{2} = \frac{12}{1}$$

$$\frac{4k-12}{2} = \frac{24}{2}$$

$$4k-12 = 24$$

$$+12 \quad +12$$

$$\frac{4k}{4} = \frac{36}{4}$$

$$k = 9$$

$$q) \frac{a+6}{2} = \frac{10}{1}$$

$$\frac{a+6}{2} = \frac{20}{2}$$

$$a+6 = 20$$

$$-6 \quad -6$$

$$a = 14$$

$$a = 14$$

$$r) \frac{3x-1}{2} = \frac{49}{1}$$

$$\frac{3x-1}{2} = \frac{98}{2}$$

$$3x-1 = 98$$

$$+1 \quad +1$$

$$\frac{3x}{3} = \frac{99}{3}$$

$$x = 33$$

$$s) n + (n+2) + (n+4) = 54$$

$$3n + 6 = 54$$

$$-6 \quad -6$$

$$\frac{3n}{3} = \frac{48}{3}$$

$$n = 16 \quad n = 16$$

$$t) \frac{a}{1} + \frac{a}{3} + \frac{2a}{1} = \frac{30}{1}$$

$$\frac{3a + a + 6a}{3} = \frac{90}{3}$$

$$\frac{10a}{10} = \frac{90}{10}$$

$$a = 9$$

$$a = 9$$

$$u) \frac{-18m + 92}{4} = \frac{86}{1}$$

$$\frac{-18m + 92}{4} = \frac{344}{4}$$

$$-18m + 92 = 344$$

$$-92 \quad -92$$

$$\frac{-18m}{-18} = \frac{252}{-18}$$

$$m = -14$$

$$v) \frac{5r-11}{5} = \frac{20}{25}$$

$$\frac{25r-55}{25} = \frac{20}{25}$$

$$25r-55 = 20$$

$$+55 \quad +55$$

$$\frac{25r}{25} = \frac{75}{25}$$

$$r = 3$$

$$w) 3x - 8 = x$$

$$-3x \quad -3x$$

$$-8 = -2x$$

$$-2 \quad -2$$

$$4 = x$$

$$x = 4$$

$$x) 2a - 5 = 4a + 3$$

$$-2a \quad -2a$$

$$-5 = 2a + 3$$

$$-3 \quad -3$$

$$-8 = 2a$$

$$\frac{-8}{2} = \frac{2a}{2}$$

$$-4 = a$$

$$a = -4$$

$$\begin{array}{r}
 y) \quad 2x+5=4x-9 \\
 \quad -2x \quad -2x \\
 \quad \quad 5=2x-9 \\
 \quad \quad +9 \quad +9 \\
 \quad \quad \frac{14}{2} = \frac{2x}{2}
 \end{array}$$

$$\underline{x=7}$$

$$\begin{array}{r}
 z) \quad 57+2x=6x+5 \\
 \quad -2x \quad -2x \\
 \quad 57=4x+5 \\
 \quad -5 \quad -5 \\
 \quad \frac{52}{4} = \frac{4x}{4}
 \end{array}$$

$$\underline{x=13}$$

$$\begin{array}{r}
 aa) \quad 4x-4=2x+22 \\
 \quad -2x \quad -2x \\
 \quad 2x-4=22 \\
 \quad +4 \quad +4 \\
 \quad \frac{2x}{2} = \frac{26}{2} \\
 \quad x=13
 \end{array}$$

$$\underline{x=13}$$

$$\begin{array}{r}
 bb) \quad 31-2n=-2+n-2-4 \\
 \quad 31-2n=n-8 \\
 \quad +2n \quad +2n \\
 \quad 31=3n-8 \\
 \quad +8 \quad +8 \\
 \quad \frac{39}{3} = \frac{3n}{3} \\
 \quad n=13
 \end{array}$$

$$\underline{n=13}$$

$$\begin{array}{r}
 cc) \quad 8(x+4)=4(x+5) \\
 \quad 8x+32=4x+20 \\
 \quad -4x \quad -4x \\
 \quad 4x+32=20 \\
 \quad -32 \quad -32 \\
 \quad \frac{4x}{4} = \frac{-12}{4} \\
 \quad x=-3
 \end{array}$$

$$\underline{x=-3}$$

$$\begin{array}{r}
 dd) \quad 4y-6-2y=-2(y-7) \\
 \quad 2y-6=-2y+14 \\
 \quad +2y \quad +2y \\
 \quad 4y-6=14 \\
 \quad +6 \quad +6 \\
 \quad \frac{4y}{4} = \frac{20}{4} \\
 \quad y=5
 \end{array}$$

$$\underline{y=5}$$

$$\begin{array}{r}
 ee) \quad (x+4)-(2x+3)=4x-34 \\
 \quad x+4-2x-3=4x-34 \\
 \quad -x+1=4x-34 \\
 \quad -4x \quad -4x \\
 \quad -5x+1=-34 \\
 \quad -1 \quad -1 \\
 \quad \frac{-5x}{-5} = \frac{-35}{-5} \\
 \quad x=7
 \end{array}$$

$$\underline{x=7}$$

$$\begin{array}{r}
 ff) \quad 3(2y+1)=24-y \\
 \quad 6y+3=24-y \\
 \quad +y \quad +y \\
 \quad 7y+3=24 \\
 \quad -3 \quad -3 \\
 \quad \frac{7y}{7} = \frac{21}{7} \\
 \quad y=3
 \end{array}$$

$$\underline{y=3}$$

$$\begin{array}{r}
 gg) \quad 4(x-1)-2(11-2x)=3x+4 \\
 \quad 4x-4-22+4x=3x+4 \\
 \quad 8x-26=3x+4 \\
 \quad -3x \quad -3x \\
 \quad 5x-26=4 \\
 \quad +26 \quad +26 \\
 \quad \frac{5x}{5} = \frac{30}{5} \\
 \quad x=6
 \end{array}$$

$$\underline{x=6}$$

$$\begin{array}{r}
 hh) \quad 6(z-2)=4z+8 \\
 \quad 6z-12=4z+8 \\
 \quad -4z \quad -4z \\
 \quad 2z-12=8 \\
 \quad +12 \quad +12 \\
 \quad \frac{2z}{2} = \frac{20}{2} \\
 \quad z=10
 \end{array}$$

$$\underline{z=10}$$

$$\begin{array}{r}
 ii) \quad 3(x+4)=5x-4 \\
 \quad 3x+12=5x-4 \\
 \quad -3x \quad -3x \\
 \quad 12=2x-4 \\
 \quad +4 \quad +4 \\
 \quad \frac{16}{2} = \frac{2x}{2} \\
 \quad 8=x
 \end{array}$$

$$\underline{x=8}$$

$$\begin{array}{r}
 jj) \quad 3m+2(m+2)=m \\
 \quad 3m+2m+4=m \\
 \quad 5m+4=m \\
 \quad -5m \quad -5m \\
 \quad \frac{4}{-4} = \frac{-4m}{-4} \\
 \quad m=-1
 \end{array}$$

$$\underline{m=-1}$$

$$\text{kk) } 2n - (n - 20) = 5n + 8$$

$$2n - n + 20 = 5n + 8$$

$$n + 20 = 5n + 8$$

$$\begin{array}{r} -n \\ -8 \end{array} \quad \begin{array}{r} -n \\ -8 \end{array}$$

$$20 = 4n + 8$$

$$\frac{12}{4} = \frac{4n}{4} \quad \underline{n = 3}$$

$$\text{ll) } \frac{6d + 1 - 7}{6} = \frac{2d}{6}$$

$$\frac{6d - 6}{6} = \frac{2d}{6}$$

$$\frac{6d - 6}{-6d} = \frac{2d}{-6d}$$

$$\frac{-6}{6} = \frac{6d}{6} \quad \underline{d = -1}$$

$$\text{mm) } \frac{14a - 6}{2} = 3(2a + 5)$$

$$\frac{14a - 6}{2} = \frac{6a + 15}{1}$$

$$14a - 6 = 12a + 30$$

$$14a - 12a = 30 + 6$$

$$\frac{2a}{2} = \frac{36}{2} \quad \underline{a = 18}$$

$$\text{nn) } \frac{3(x + 8)}{2} = 3(1 - x)$$

$$\frac{3x + 24}{2} = \frac{3 - 3x}{1}$$

$$3x + 24 = 6 - 6x$$

$$3x + 6x = 6 - 24$$

$$\frac{9x}{9} = \frac{-18}{9} \quad \underline{x = -2}$$

$$x = -2$$

$$\text{oo) } \frac{x + 5}{2} = \frac{3x - 5}{5}$$

$$\frac{5x + 25}{10} = \frac{6x - 10}{10}$$

$$5x + 25 = 6x - 10$$

$$25 + 10 = 6x - 5x$$

$$35 = x \quad \underline{x = 35}$$

$$\text{pp) } -(x + 11) = \frac{-3(-4x + 10)}{6}$$

$$\frac{-x - 11}{1} = \frac{12x - 30}{6}$$

$$\frac{-6x - 66}{6} = \frac{12x - 30}{6}$$

$$-66 + 30 = 12x + 6x$$

$$\frac{-36}{18} = \frac{18x}{18} \quad \underline{x = -2}$$

$$\text{qq) } \frac{4x - 8}{2} + \frac{4}{1} = \frac{x}{2} + \frac{6}{1}$$

$$\frac{4x - 8}{2} + \frac{8}{2} = \frac{x}{2} + \frac{12}{2}$$

$$4x = x + 12$$

$$\begin{array}{r} -x \\ -x \end{array}$$

$$\frac{3x}{3} = \frac{12}{3} \quad \underline{x = 4}$$

$$\text{rr) } 8(x + 5) = \frac{-2(7x - 11)}{4}$$

$$\frac{8x + 40}{1} = \frac{-14x + 22}{4}$$

$$\frac{32x + 160}{4} = \frac{-14x + 22}{4}$$

$$32x + 14x = 22 - 160$$

$$\frac{46x}{46} = \frac{-138}{46} \quad \underline{x = -3}$$

Choix de réponses:

v) 3	a) -19	c) 5	i) 5	f) 7	e) -9	p) 9	k) -8	r) 9	jj) -1	bb) 13
nn) -2	y) 7	n) -48	h) 16	hh) 10	mm) 18	qq) 4	rr) -3	s) 16	gg) 6	o) 24
f) -3	b) 2	w) 4	l) -1	x) -4	v) -14	aa) 13	ii) 8	oo) 35	ee) 7	ll) -1
cc) -3	z) 13	r) 33	g) 11	q) 14	pp) -2	m) -1	d) -6	ff) 3	kk) 3	dd) 5

BONNE RÉOLUTION!!!