Find the value of each letter in the identities below. Circle the answers at the bottom as you find them.

$8(ax+2) \equiv 24x+16$ $a =$ ☐	$5(2x+b) \equiv 10x+45$ $b =$ ☐	$c(9x+d) \equiv 18x+26$ $c =$ ☐, $d =$ ☐	$e(2+fx) \equiv 24x-8$ $e =$ ☐, $f =$ ☐
$6(3x+5)+g \equiv 18x+44$ $g =$ ☐	$4(5x-3)+hx \equiv 13x-12$ $h =$ ☐	$i(8x-3) \equiv 4x+j$ $i =$ ☐, $j =$ ☐	$12(6x+k)-lx \equiv 71x+4$ $k =$ ☐, $l =$ ☐
$(x+m)(x-2) \equiv x^2+5x-14$ $m =$ ☐	$(x+4)(x-7) \equiv x^2+nx-28$ $n =$ ☐	$(x+o)(x+20) \equiv x^2+px-160$ $o =$ ☐, $p =$ ☐	$(2x+1)(x-5) \equiv 2x^2+rx+q$ $q =$ ☐, $r =$ ☐
$(x-s)^2+10 \equiv x^2-10x+35$ $s =$ ☐	$(x+3)^2-3 \equiv x^2+tx+t$ $t =$ ☐	$(x+u)^2-v \equiv x^2+22x+71$ $u =$ ☐, $v =$ ☐	$x^2-5x+6 \equiv (x+w)^2-y$ $w =$ ☐, $y =$ ☐
$\frac{\alpha x-8}{4x+\beta} \equiv 4$ $\alpha =$ ☐, $\beta =$ ☐	$\frac{x^2+\gamma x+44}{x+11} \equiv x+\delta$ $\gamma =$ ☐, $\delta =$ ☐	$(x+5)^2(x-2) \equiv x^3+\epsilon x^2+5x+\zeta$ $\epsilon =$ ☐, $\zeta =$ ☐	$(x-\eta)(x+8) \equiv (x+\theta)^2-81$ $\eta =$ ☐, $\theta =$ ☐

Answers (One of the questions has multiple solutions. Which one? What are the other possible solutions?)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
-1	-2	-3	-4	-5	-6	-7	-8	-9	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$-1\frac{1}{2}$	$-2\frac{1}{2}$	-50	50

Find the value of each letter in the identities below. Circle the answers at the bottom as you find them.

$8(ax+2) \equiv 24x+16$ $a = \boxed{3}$	$5(2x+b) \equiv 10x+45$ $b = \boxed{9}$	$c(9x+d) \equiv 18x+26$ $c = \boxed{2}, d = \boxed{13}$	$e(2+fx) \equiv 24x-8$ $e = \boxed{-4}, f = \boxed{-6}$
$6(3x+5)+g \equiv 18x+44$ $g = \boxed{14}$	$4(5x-3)+hx \equiv 13x-12$ $h = \boxed{-7}$	$i(8x-3) \equiv 4x+j$ $i = \boxed{\frac{1}{2}}, j = \boxed{-1\frac{1}{2}}$	$12(6x+k)-lx \equiv 71x+4$ $k = \boxed{\frac{1}{3}}, l = \boxed{1}$
$(x+m)(x-2) \equiv x^2+5x-14$ $m = \boxed{7}$	$(x+4)(x-7) \equiv x^2+nx-28$ $n = \boxed{-3}$	$(x+o)(x+20) \equiv x^2+px-160$ $o = \boxed{-8}, p = \boxed{12}$	$(2x+1)(x-5) \equiv 2x^2+rx+q$ $q = \boxed{-9}, r = \boxed{-5}$
$(x-s)^2+10 \equiv x^2-10x+35$ $s = \boxed{5}$	$(x+3)^2-3 \equiv x^2+tx+t$ $t = \boxed{6}$	$(x+u)^2-v \equiv x^2+22x+71$ $u = \boxed{11}, v = \boxed{50}$	$x^2-5x+6 \equiv (x+w)^2-y$ $w = \boxed{-2\frac{1}{2}}, y = \boxed{\frac{1}{4}}$
$\frac{\alpha x-8}{4x+\beta} \equiv 4$ $\alpha = \boxed{16}, \beta = \boxed{-2}$	$\frac{x^2+\gamma x+44}{x+11} \equiv x+\delta$ $\gamma = \boxed{15}, \delta = \boxed{4}$	$(x+5)^2(x-2) \equiv x^3+\epsilon x^2+5x+\zeta$ $\epsilon = \boxed{8}, \zeta = \boxed{-50}$	$(x-\eta)(x+8) \equiv (x+\theta)^2-81$ $\eta = \boxed{10}, \theta = \boxed{-1}$

Answers (One of the questions has multiple solutions. Which one? What are the other possible solutions?)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
-1	-2	-3	-4	-5	-6	-7	-8	-9	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$-1\frac{1}{2}$	$-2\frac{1}{2}$	-50	50

Find the value of each letter in the identities below. Circle the answers at the bottom as you find them.

$\frac{ax+12}{4x+6} \equiv 2$ $a =$ ☐	$\frac{7x+b}{21x-12} \equiv \frac{3x+5}{9x+15}$ $b =$ ☐	$\frac{cx-10}{18x-12} \equiv \frac{35x-5}{42x+d}$ $c =$ ☐, $d =$ ☐	$\frac{12-9x}{6x+e} \equiv f$ $e =$ ☐, $f =$ ☐
$\frac{x}{3} - \frac{x}{g} \equiv \frac{x}{12}$ $g =$ ☐	$\frac{x+1}{7} - \frac{x}{2} \equiv \frac{hx+20}{140}$ $h =$ ☐	$\frac{2x+i}{5} + \frac{x+5}{3} \equiv \frac{jx+22}{15}$ $i =$ ☐, $j =$ ☐	$\frac{kx-8}{6} - \frac{4x-11}{8} \equiv \frac{l}{12}$ $k =$ ☐, $l =$ ☐
$\frac{x^2+mx}{x^2+7x+10} \equiv \frac{x}{x+2}$ $m =$ ☐	$\frac{x^2-x-12}{x^2-9x+20} \equiv \frac{x+3}{x+n}$ $n =$ ☐	$\frac{x+4}{x^2-\sigma} \equiv \frac{p}{x-4}$ $\sigma =$ ☐, $p =$ ☐	$\frac{x^2+qx+r}{x^2+x-20} \equiv \frac{x^2+3x-18}{x^2+11x+30}$ $q =$ ☐, $r =$ ☐
$\frac{3x^2-sx-5}{x-5} \equiv 3x+1$ $s =$ ☐	$\frac{3x^2+tx}{2x^2-18} \equiv \frac{3x}{2x-6}$ $t =$ ☐	$\frac{x^2+ux-18}{2x^2-x-6} \equiv \frac{x+9}{vx+3}$ $u =$ ☐, $v =$ ☐	$\frac{wx^2+12x-1}{26x^2+11x-1} \equiv \frac{11x^2+yx-1}{22x^2+9x-1}$ $w =$ ☐, $y =$ ☐
$\frac{5}{x+3} - \frac{4}{x+\alpha} = \frac{x-27}{x^2+\beta}$ $\alpha =$ ☐, $\beta =$ ☐	$\frac{\gamma}{x+4} - \frac{x-44}{x^2-16} \equiv \frac{\delta}{10x-40}$ $\gamma =$ ☐, $\delta =$ ☐	$\frac{6\zeta}{5-x} + \frac{3}{x+7} \equiv \frac{29-x}{14\epsilon-2x-x^2}$ $\epsilon =$ ☐, $\zeta =$ ☐	$\frac{1}{x} + \frac{1}{x+1} + \frac{\eta}{x+2} \equiv \frac{12\theta x+2}{x^3+3x^2+2x}$ $\eta =$ ☐, $\theta =$ ☐

Answers

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
-1	-2	-3	-4	-5	-6	-7	-8	-9	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$-1\frac{1}{2}$	$2\frac{1}{2}$	-50	50

Find the value of each letter in the identities below. Circle the answers at the bottom as you find them.

$\frac{ax+12}{4x+6} \equiv 2$ $a =$ 8	$\frac{7x+b}{21x-12} \equiv \frac{3x+5}{9x+15}$ $b =$ −4	$\frac{cx-10}{18x-12} \equiv \frac{35x-5}{42x+d}$ $c =$ 15, $d =$ −6	$\frac{12-9x}{6x+e} \equiv f$ $e =$ −8, $f =$ −1½
$\frac{x}{3} - \frac{x}{g} \equiv \frac{x}{12}$ $g =$ 4	$\frac{x+1}{7} - \frac{x}{2} \equiv \frac{hx+20}{140}$ $h =$ −50	$\frac{2x+i}{5} + \frac{x+5}{3} \equiv \frac{jx+22}{15}$ $i =$ −1, $j =$ 11	$\frac{kx-8}{6} - \frac{4x-11}{8} \equiv \frac{l}{12}$ $k =$ 3, $l =$ ½
$\frac{x^2+mx}{x^2+7x+10} \equiv \frac{x}{x+2}$ $m =$ 5	$\frac{x^2-x-12}{x^2-9x+20} \equiv \frac{x+3}{x+n}$ $n =$ −5	$\frac{x+4}{x^2-\sigma} \equiv \frac{p}{x-4}$ $\sigma =$ 16, $p =$ 1	$\frac{x^2+qx+r}{x^2+x-20} \equiv \frac{x^2+3x-18}{x^2+11x+30}$ $q =$ −7, $r =$ 12
$\frac{3x^2-sx-5}{x-5} \equiv 3x+1$ $s =$ 14	$\frac{3x^2+tx}{2x^2-18} \equiv \frac{3x}{2x-6}$ $t =$ 9	$\frac{x^2+ux-18}{2x^2-x-6} \equiv \frac{x+9}{vx+3}$ $u =$ 7, $v =$ 2	$\frac{wx^2+12x-1}{26x^2+11x-1} \equiv \frac{11x^2+yx-1}{22x^2+9x-1}$ $w =$ 13, $y =$ 10
$\frac{5}{x+3} - \frac{4}{x+\alpha} = \frac{x-27}{x^2+\beta}$ $\alpha =$ −3, $\beta =$ −9	$\frac{\gamma}{x+4} - \frac{x-44}{x^2-16} \equiv \frac{\delta}{10x-40}$ $\gamma =$ 6, $\delta =$ 50	$\frac{6\zeta}{5-x} + \frac{3}{x+7} \equiv \frac{29-x}{14\epsilon-2x-x^2}$ $\epsilon =$ 2½, $\zeta =$ ⅓	$\frac{1}{x} + \frac{1}{x+1} + \frac{\eta}{x+2} \equiv \frac{12\theta x+2}{x^3+3x^2+2x}$ $\eta =$ −2, $\theta =$ ¼

Answers

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
−1	−2	−3	−4	−5	−6	−7	−8	−9	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$-1\frac{1}{2}$	$2\frac{1}{2}$	−50	50