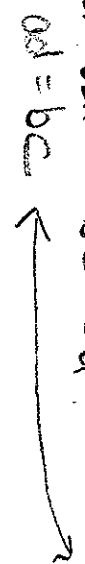


29  $\frac{a+b}{b} = \frac{c+d}{d}$



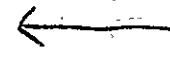
$d(a+b) = b(c+d)$   
 $da+bd = bc+bd$



$ad = bc$

$ad \neq bc$

$\frac{a}{b} = \frac{c}{d}$



30  $\frac{x+y}{y} = \frac{s}{s}$

~~$\frac{x-y}{x+y}$~~   $= \frac{s}{y}$

$s(x+y) = sy$

$y(x-y) = s(x+y)$

~~$xy = y(x-y)$~~   
 $r = (x-y)$

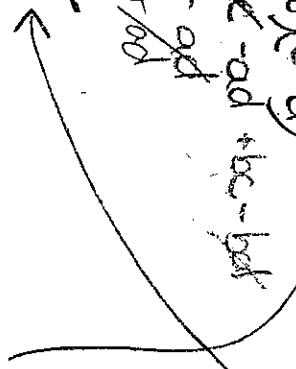
31  $\frac{a-b}{a+b} = \frac{c-d}{c+d}$

$\frac{a}{b} = \frac{c}{d}$

$(a-b)(c+d) = (a+b)(c-d)$

~~$ac+ad-bc-bd = ac-ad+bc-bd$~~   
 ~~$ad-bc = bc-ad$~~   
 ~~$+ad+bc+bc+ad$~~   
 ~~$2ad = 2bc$~~   
 ~~$ad = bc$~~

$ad = bc$



33)

$$x^2 = (x+5)(x-4)$$

$$x^2 = x^2 + x - 20$$

$$0 = x - 20$$

$$\boxed{20 = x}$$

35)

$$\frac{x+1}{x-2} = \frac{x+5}{x-6}$$

$$(x+1)(x-6) = (x-2)(x+5)$$

$$x^2 - 5x - 6 = x^2 - 13x - 10$$

$$4 = 8x$$

$$\boxed{\frac{1}{2} = x}$$

37)

$$\frac{x(x+5)}{4x+4} = \frac{9}{5}$$

$$5(x^2+5x) = 36x+36$$

$$5x^2+25x = 36x+36$$

$$5x^2-11x-36 = 0$$

$$(5x+9)(x-4) = 0$$

$$\boxed{x = -\frac{9}{5}}$$

$$\boxed{x = 4}$$

39)

$$\frac{4}{x-9} = \frac{4}{7}$$

$$\frac{x+4}{x-4} = \frac{5}{3}$$

$$7y = 4(x-9)$$

$$7y = 4x - 36$$

$$7y = 4(4y) - 36$$

$$-9y = -36$$

$$\boxed{y = 4}$$

$$3(x+y) = 5(x-y)$$

$$3x+3y = 5x-5y$$

$$\frac{8y}{2} = \frac{2x}{2}$$

$$4y = x$$

$$\frac{4(4) = x}{16 = x}$$

$$\textcircled{30} \quad \frac{x+y}{y} = \frac{5}{3}$$

$$\frac{x-y}{x+y} = \frac{3}{5}$$

$$5(x+y) = 5y$$

$$y(x-y) = 3(x+y)$$

$$xy = y(x-y)$$

$$x = x-y$$

$$\textcircled{32} \quad \frac{a+c}{b+d} = \frac{a-c}{b-d}$$

$$\frac{a}{b} = \frac{c}{d}$$

$$(a+c)(b-d) = (b+d)(a-c)$$

$$ad = bc$$

$$ab - ad + cb - cd = ba - bc + da - dc$$

$$-ad + cb = -bc + da$$

$$-ad + abc = da + ad$$

$$abc = 2ad$$

$$bc = ad$$

$$\textcircled{34} \quad (x-2)(x+3) = x^2$$

$$x^2 + x - 6 = x^2$$

$$x - 6 = 0$$

$$x = 6$$

$$\textcircled{36} \quad (x-1)(x+2) = (x+4)(x-2)$$

$$x^2 + x - 2 = x^2 + 2x - 8$$

$$0 = x - 6$$

$$6 = x$$

38

$$(x-1)(3x-2) = 10(x+2)$$

$$3x^2 - 5x + 2 = 10x + 20$$

$$3x^2 - 15x - 18 = 0$$

$$(3x - 18)(x + 1) = 0$$

$$x = 6$$

$$x = -1$$

40

$$\frac{x-3}{4} = \frac{y+2}{2}$$

$$\frac{x+y-1}{6} = \frac{x-y+1}{5}$$

$$2(x-3) = 4(y+2)$$

$$2x - 6 = 4y + 8$$

$$2x = 4y + 14$$

$$x = 2y + 7$$

$$5(x+y-1) = 6(x-y+1)$$

$$5x + 5y - 5 = 6x - 6y + 6$$

$$11y - 11 = x$$

$$2y + 7 = 11y - 11$$

$$-9y = -18$$

$$y = 2$$

$$x = 2(2) + 7$$

$$x = 11$$