## S.3 MATH WORKSHEET THREE ANSWERS

1. Simplify the following expressions

1. Simplify the following expressions	
(a) $\frac{m+1}{2} + \frac{m-3}{2}$	(b) $\frac{2w+1}{2} - \frac{6w-2}{4}$
m+1+m-3	$-\frac{2(2w+1)}{16w-2}$
=	Δ.
m + m + 1 - 3	4w + 2 - 6w + 2
=	$=\frac{4w+2-6w+2}{4}$
$\frac{2m-2}{}$	$=\frac{4w-6w+2+2}{4}$
2	4
$=\frac{2(m-1)}{2}$	$=\frac{-2w+4}{4}$
$= \frac{m + m + 1 - 3}{2}$ $= \frac{2m - 2}{2}$ $= \frac{2(m - 1)}{2}$ $= m - 1$	4 2 ( w + 2)
= m-1	$=\frac{2(-w+z)}{z}$
	$\begin{vmatrix} -w+2 & 2-w \end{vmatrix}$
	$=\frac{m+2}{2}or\frac{2}{2}$
(c) $\frac{y+6}{5} + \frac{2y-5}{15}$	$= \frac{\frac{2(-w+2)}{4}}{2}$ $= \frac{-w+2}{2} \text{ or } \frac{2-w}{2}$ $(d) \frac{5-2n}{4} + \frac{3p-1}{2}$
$\begin{pmatrix} 5 & 15 \\ 3(y+6)+1(2y-5) \end{pmatrix}$	$\begin{pmatrix} a & 4 & 2 \\ 5 - 2n + 2(2n - 1) \end{pmatrix}$
$=\frac{3(y+0)+1(2y-3)}{4\pi}$	$=\frac{3-2\pi+2(3p-1)}{4}$
3v + 18 + 2v - 5	5-2n+6p-2
$= \frac{3(y+6)+1(2y-5)}{15}$ $= \frac{3y+18+2y-5}{15}$	$= \frac{5 - 2n + 2(3p - 1)}{4}$ $= \frac{5 - 2n + 6p - 2}{4}$
3y + 2y + 18 - 5	$=\frac{6p-2n+5-2}{4}$
$=\frac{3y+2y+18-5}{15}$	= 4
$=\frac{5y+13}{15}$	$-\frac{6p-2n+3}{}$
	$= \frac{6p - 2n + 3}{4}$ $(f) \frac{v}{2} - \frac{v+1}{4}$
(e) $\frac{3x+4}{11} + \frac{2x}{33}$	$\int \left( f \right) \frac{v}{2} - \frac{v+1}{4}$
$3(3x+4)+1\times 2x$	$2 \times v - 1(v + 1)$
$= \frac{3(3x+4)+1\times 2x}{33}$ $-9x+12+2x$	4
$=\frac{9x+12+2x}{}$	$= \frac{2 \times v - 1(v + 1)}{4}$ $= \frac{2v - v - 1}{4}$ $= \frac{v - 1}{4}$
$=\frac{3x+12+2x}{33}$	4
$=\frac{9x+2x+12}{32}$	$=\frac{\nu-1}{4}$
$\begin{bmatrix} 33 \\ 11x + 12 \end{bmatrix}$	4
$=\frac{11x+12}{33}$	
(g) $x + 2a - \frac{3x-1}{4} - \frac{2a}{5}$	(h) $\frac{x-1}{2} - \frac{1}{3} + \frac{x}{3}$
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{pmatrix} 1 & 2 & 3 & 3 \\ 3(x-1) & -2 & 1 & +2 & x \end{pmatrix}$
$=\frac{x}{1} + \frac{2a}{1} - \frac{3x - 1}{4} - \frac{2a}{5}$	$= \frac{3(x-1)-2\times 1+2\times x}{6}$
$20 \times x + 20 \times 2a - 5(3x - 1) - 4 \times 2a$	3x - 3 - 2 + 2x
= 20	=
20x + 40a - 15x + 5 - 8a	3x + 2x - 3 - 2
=	$=\frac{3x+2x-3-2}{6}$
$=\frac{40a-8a+20x-15x}{}$	$=\frac{5x-5}{}$
20	
$=\frac{32a+5x+5}{20}$	$=\frac{\mathbf{o}(x-1)}{\epsilon} or \frac{\mathbf{o}}{\epsilon}(x-1)$
20 4a . 3a+5 $3(a+2)$	$= \frac{5(x-1)}{6} \text{ or } \frac{5}{6}(x-1)$ $(j) \frac{3p}{12} - \left(\frac{p}{2} - \frac{p}{4} + \frac{5p}{6}\right)$
(i) $\frac{4a}{7} + \frac{3a+5}{2} - \frac{3(a+2)}{3}$	$(1)\frac{1}{12} - (\frac{1}{2} - \frac{1}{4} + \frac{1}{6})$
$= \frac{4a}{7} + \frac{3a+5}{2} - \frac{(a+2)}{1}$ $- \frac{2 \times 4a + 7(3a+5) - 14(a+2)}{1}$	$=\frac{3p}{12}-\left(\frac{6\times p-3\times p+2\times 5p}{12}\right)$
$\begin{bmatrix} 7 & 2 & 1 \\ 2 & 4a + 7(2a + 5) & 14(a + 2) \end{bmatrix}$	$\begin{bmatrix} 12 & 12 \\ 2n & 6n & 2n + 10n \end{bmatrix}$
	$=\frac{3p}{12}-\left(\frac{6p-3p+10p}{12}\right)$
8a + 21a + 35 - 14a - 28	$\begin{vmatrix} 12 & 12 \\ 3n & 3n + 10n \end{vmatrix}$
14	$=\frac{3\overline{p}}{12}-\left(\frac{3p+10\overline{p}}{12}\right)$
29a - 14a + 35 - 28	$=\frac{3p}{12}-\left(\frac{13p}{12}\right)$
14	$=\frac{1}{12}-(\frac{1}{12})$

## $=\frac{15a+7}{14}$

$$= \frac{3p - 13p}{12}$$

$$= \frac{-10p}{12}$$

$$= -\frac{5p}{6}$$

## 2. Solve the following equations

(a) 
$$\frac{5x+2}{3} - \frac{7x+2}{5} = 2$$
  
 $15 \times \frac{5x+2}{3} - \frac{7x+2}{5} \times 15 = 2 \times 15$   
 $5(5x+2) - 3(7x+2) = 30$   
 $25x+10-21x-6=30$   
 $25x-21x+10-6=30$   
 $4x+4=30$   
 $4x=30-4$   
 $4x=26$   
 $\frac{4x}{4} = \frac{26}{4}$   
 $x = \frac{13}{2}$   
 $x = 6\frac{1}{2}$ 

(b) 
$$\frac{3}{4}(2a+1) = \frac{5}{6}(a+5)$$
  
 $12 \times \frac{3}{4}(2a+1) = \frac{5}{6}(a+5) \times 12$   
 $3 \times 3(2a+1) = 2 \times 5(a+5)$   
 $9(2a+1) = 10(a+5)$   
 $18a+9=10a+50$   
 $18a-10=50-9$   
 $8a=50-9$   
 $8a=41$   
 $\frac{8a}{8}=\frac{41}{8}$   
 $a=5\frac{1}{8}$ 

$$(c) \frac{n-1}{2} - \frac{n-3}{4} = \frac{1}{2}$$

$$4 \times \frac{n-1}{2} - \frac{n-3}{4} \times 4 = \frac{1}{2} \times 4$$

$$2(n-1) - 1(n-3) = 1 \times 2$$

$$2n-2-n+3=2$$

$$2n-n-2+3=2$$

$$n+1=2$$

$$n=2-1$$

$$n=1$$

$$(d) \frac{2}{2} - \frac{x+1}{4} = \frac{x}{3} + 2$$

$$12 \times \frac{2}{2} - \frac{x+1}{4} \times 12 = \frac{x}{3} \times 12 + 2 \times 12$$

$$6 \times 2 - 3(x+1) = x \times 4 + 24$$

$$12 - 3x - 3 = 4x + 24$$

$$12 - 3 - 3x = 4x + 24$$

$$9 - 3x = 4x + 24$$

$$9 - 3x = 4x + 24$$

$$-3x - 4x = 24 - 9$$

$$-7x = 15$$

$$\frac{-7x}{-7} = \frac{15}{-7}$$

$$x = -\frac{15}{7}$$

$$x = -2\frac{1}{7}$$

$$(e) \frac{n+1}{2} - \frac{n-3}{4} = \frac{n+2}{3}$$

$$12 \times \frac{n+1}{2} - \frac{n-3}{4} \times 12 = \frac{n+2}{3} \times 12$$

$$6(n+1) - 3(n-3) = 4(n+2)$$

$$6n+6-3n+9 = 4n+8$$

$$6n-3n+6+9 = 4n+8$$

$$3n+15 = 4n+8$$

$$3n-4n = 8-15$$

$$-n = -7$$

$$\frac{-n}{-1} = \frac{-7}{-1}$$

$$n = 7$$

$$x = -2\frac{1}{7}$$

$$(f) \frac{4p-1}{3} - \frac{3p-1}{2} = \frac{5-2p}{4}$$

$$12 \times \frac{4p-1}{3} - \frac{3p-1}{2} \times 12 = \frac{5-2p}{4} \times 12$$

$$4(4p-1) - 6(3p-1) = 3(5-2p)$$

$$16p-4-18p+6=15-6p$$

$$16p-18p-4+6=15-6p$$

$$-2p+2=15-6p$$

$$-2p+6p=15-2$$

$$4p=13$$

$$\frac{4p}{4} = \frac{13}{4}$$

$$p = \frac{13}{4}$$

$$p = 3\frac{1}{4}$$

(g) $\frac{1}{5}(w+6) - \frac{1}{15}(2w-5) = \frac{1}{3}(1-w)$	$(h)\frac{1}{2} - \frac{x}{6} = -\frac{5}{2}$
$15 \times \frac{1}{5}(w+6) - \frac{1}{15}(2w-5) \times 15 = \frac{1}{3}(1-w) \times 15$	$(h)\frac{1}{2} - \frac{x}{6} = -\frac{5}{2}$ $6 \times \frac{1}{2} - \frac{x}{6} \times 6 = -\frac{5}{2} \times 6$
3(w+6) - (2w-5) = 5(1-w)	$\begin{vmatrix} 2 & 6 & 2 \\ 3 \times 1 - x \times 1 = -5 \times 3 \end{vmatrix}$
3w + 18 - 2w + 5 = 5 - 5w	$3 \times 1 - x \times 1 = -3 \times 3$ 3 - x = -15
3w - 2w + 18 + 5 = 5 - 5w	$\begin{vmatrix} 3 - x15 \\ -x = -15 - 3 \end{vmatrix}$
w + 23 = 5 = 5w	10
w + 5w = 5 - 23	-x = -18 $-x = -18$ $-1 = -1$ $x = 18$
6w = -18	$\frac{-x}{-} = \frac{-18}{-}$
6w = -18 6w = -18	-1 -1
$\frac{\partial W}{\partial t} = \frac{10}{100}$	x = 18
$\frac{\overline{6}}{6} = \frac{\overline{6}}{6}$ $w = -3$	
$W = -3 \checkmark$ $4n-1 3n-1$	r+1 r-4
$(i)\frac{4p-1}{3} - \frac{3p-1}{2} = 1$	$(j)\frac{x+1}{3} + \frac{x-4}{2} = 5$
4p-1 $3p-1$	x+1 $x-4$
$6 \times \frac{4p-1}{3} - \frac{3p-1}{2} \times 6 = 1 \times 6$	$6 \times \frac{x+1}{3} + \frac{x-4}{2} \times 6 = 5 \times 6$
2(4p-1) - 3(3p-1) = 6	2(x+1) + 3(x-4) = 30
8p - 2 - 9p + 3 = 6	2x + 2 + 3x - 12 = 30
8p - 9p - 2 + 3 = 6	2x + 3x + 2 - 12 = 30
-p+1=6	5x - 10 = 30
-p=6-1	5x = 30 + 10
-p=5	5x = 40
	5x   40
$\left  \frac{-p}{-1} = \frac{5}{-1} \right $	$\frac{1}{5} = \frac{1}{5}$
p = -5	x = 8
	, 0

END.