Name: _____

A.A.25: Solving Equations with Fractional Expressions 1: Solve equations involving fractional expressions. Note: Expressions which result in linear equations in one variable.

1 What is the solution set of the equation $\frac{x}{5} + \frac{x}{2} = 14$?
1) {4}
2) {10}
3) {20}
4) {49}

2 What is the value of x in the equation $\frac{x}{2} + \frac{x}{6} = 2$?
1) 12
2) 8
3) 3
4) $\frac{1}{4}$

3 Which value of x is the solution of the equation $\frac{2x}{3} + \frac{x}{6} = 5$?
1) 6
2) 10
3) 15
4) 30

4 Which value of x is the solution of the equation $\frac{2}{3}x + \frac{1}{2} = \frac{5}{6}$?
1) $\frac{1}{2}$
2) 2
3) $\frac{2}{3}$
4) $\frac{3}{2}$

5 In the equation $\frac{1}{4}n + 5 = 5\frac{1}{2}$, n is equal to
1) 8
2) 2
3) $\frac{1}{2}$
4) $\frac{1}{8}$

6 What is the value of x in the equation $\frac{3}{4}x + 2 = \frac{5}{4}x - 6$?
1) –16
2) 16
3) –4
4) 4

7 What is the value of w in the equation $\frac{3}{4}w + 8 = \frac{1}{3}w - 7$?
1) 2.4
2) –0.2
3) –13.846
4) –36

8 What is the value of w in the equation $\frac{1}{2}w + 7 = 2w - 2$?
1) 6
2) 2
3) $3\frac{1}{3}$
4) 3.6

Name: _____

9 Solve for x: $\frac{3}{5}(x+2) = x-4$

1) 8
2) 13
3) 15
4) 23

10 Which value of x is the solution of $\frac{2x}{5} + \frac{1}{3} = \frac{7x-2}{15}$?

1) $\frac{3}{5}$
2) $\frac{31}{26}$
3) 3
4) 7

11 Which value of x is the solution of the equation $\frac{1}{7} + \frac{2x}{3} = \frac{15x-3}{21}$?

1) 6
2) 0
3) $\frac{4}{13}$
4) $\frac{6}{29}$

12 Which value of x is the solution of $\frac{x}{3} + \frac{x+1}{2} = x$?

1) 1
2) –1
3) 3
4) –3

13 The number of people on the school board is represented by x. Two subcommittees with an equal number of members are formed, one with $\frac{2}{3}x - 5$ members and the other $\frac{x}{4}$ with members. How many people are on the school board?

1) 20
2) 12
3) 8
4) 4

14 Solve for x: $\frac{1}{16}x + \frac{1}{4} = \frac{1}{2}$

15 Solve for x: $\frac{x+3}{2} + \frac{2x}{7} = 7$

16 Solve for x: $\frac{x-3}{5} + \frac{4x}{3} = 4$

17 Solve for m: $\frac{m}{5} + \frac{3(m-1)}{2} = 2(m-3)$

A.A.25: Solving Equations with Fractional Expressions 1: Solve equations involving fractional expressions. Note: Expressions which result in linear equations in one variable.
Answer Section

1 ANS: 3

$$\frac{2x + 5x}{10} = 14$$
$$7x = 140$$
$$x = 20$$

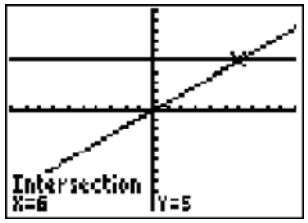
REF: 010507a

2 ANS: 3

$$\frac{6x + 2x}{12} = 2$$
$$8x = 24$$
$$x = 3$$

REF: 010719a

3 ANS: 1



$$\frac{(2x \times 6) + (3 \times x)}{3 \times 6} = 5$$
$$\frac{12x + 3x}{18} = 5$$
$$15x = 90$$
$$x = 6$$

REF: 060907ia

4 ANS: 1

$$\frac{2x}{3} + \frac{1}{2} = \frac{5}{6}$$
$$\frac{2x}{3} = \frac{1}{3}$$
$$6x = 3$$
$$x = \frac{1}{2}$$

REF: 011112ia

5 ANS: 2

$$\frac{1}{4}n + 5 = 5\frac{1}{2}$$
$$\frac{1}{4}n = \frac{1}{2}$$
$$n = 2$$

REF: 080708a

6 ANS: 2

$$\frac{3}{4}x + 2 = \frac{5}{4}x - 6$$
$$8 = \frac{2}{4}x$$
$$x = 16$$

REF: 010204a

7 ANS: 4

$$\frac{3}{4}w + 8 = \frac{1}{3}w - 7$$
$$\frac{5}{12}x = -15$$
$$5x = -180$$
$$x = -36$$

REF: 080620a

8 ANS: 1

$$\frac{1}{2}w + 7 = 2w - 2$$
$$\frac{3}{2}w = 9$$
$$w = 6$$

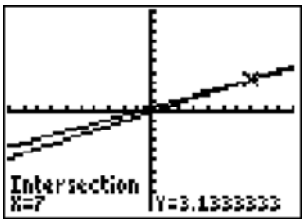
REF: 060704a

9 ANS: 2

$$\frac{3}{5}(x + 2) = x - 4$$
$$3(x + 2) = 5(x - 4)$$
$$3x + 6 = 5x - 20$$
$$26 = 2x$$
$$x = 13$$

REF: 080909ia

10 ANS: 4



$$\frac{2x}{5} + \frac{1}{3} = \frac{7x-2}{15}$$

$$\frac{(2x \times 3) + (5 \times 1)}{5 \times 3} = \frac{7x-2}{15}$$

$$\frac{6x+5}{15} = \frac{7x-2}{15}$$

$$6x + 5 = 7x - 2$$

$$x = 7$$

REF: 080820ia

11 ANS: 1

$$\frac{1}{7} + \frac{2x}{3} = \frac{15x-3}{21}$$

$$\frac{14x+3}{21} = \frac{15x-3}{21}$$

$$14x + 3 = 15x - 3$$

$$x = 6$$

REF: 011328ia

12 ANS: 3

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

$$\frac{2x + 3(x+1)}{6} = x$$

$$5x + 3 = 6x$$

$$3 = x$$

REF: 061019ia

13 ANS: 2

$$\frac{2}{3}x - 5 = \frac{x}{4}$$

$$\frac{5}{12}x = 5$$

$$5x = 60$$

$$x = 12$$

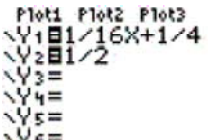
REF: 060418a

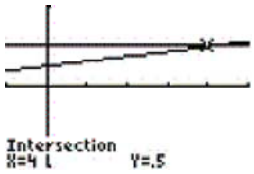
14 ANS:

$$\frac{1}{16}x + \frac{1}{4} = \frac{1}{2}$$

4. $\frac{1}{16}x = \frac{1}{4}$.

$x = 4$



. 

REF: 010636a

15 ANS:
7

REF: 069405siii

16 ANS:
3

REF: 069803siii

17 ANS:

$$\frac{m}{5} + \frac{3(m-1)}{2} = 2(m-3)$$

$$\frac{2m}{10} + \frac{15(m-1)}{10} = 2m - 6$$

$$\frac{17m-15}{10} = 2m - 6$$

$$17m - 15 = 20m - 60$$

$$45 = 3m$$

$$15 = m$$

REF: 081139ia