

**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

## A.A.25: Solving Equations with Fractional Expressions 1

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- 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

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

- 1) 1
- 2) -1
- 3) 3
- 4) -3

- 12 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

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

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

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

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

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**Answer Section**

1 ANS: 3

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

$$7x = 140$$

$$x = 20$$

REF: 010507a

2 ANS: 3

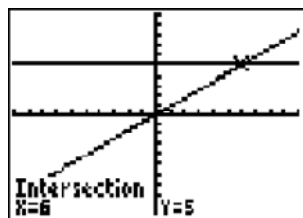
$$\frac{6x + 2x}{12} = 2$$

$$8x = 24$$

$$x = 3$$

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

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

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

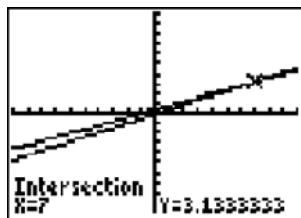
$$3x + 6 = 5x - 20$$

$$26 = 2x$$

$$x = 13$$

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: 3

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

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

$$5x+3 = 6x$$

$$3 = x$$

REF: 061019ia

12 ANS: 2

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

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

$$5x = 60$$

$$x = 12$$

REF: 060418a

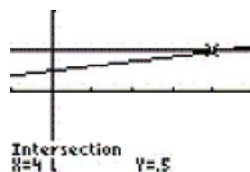
13 ANS:

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

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

$$x = 4$$

Plot1 Plot2 Plot3  
 \V1=1/16X+1/4  
 \V2=1/2  
 \V3=  
 \V4=  
 \V5=  
 \V6=  
 \V7=



REF: 010636a

14 ANS:  
7

REF: 069405siii

15 ANS:  
3

REF: 069803siii

16 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