

All work must be shown (legibly) and done in pencil for full credit.

**1.** (4 points) Simplify the following sums

(a)  $-2 + 9 =$

(b)  $3 + (-7) =$

**3.** (4 points) Simplify the following sums

(a)  $-15 + 39 =$

(b)  $23 + (-44) =$

**2.** (4 points) Simplify the following differences

(a)  $-8 - (-3) =$

(b)  $4 - (-5) =$

**4.** (4 points) Simplify the following differences

(a)  $-24 - (-27) =$

(b)  $18 - (-25) =$

5. (4 points) Simplify the following products

(a)  $-8(15)$

(b)  $-19(-12)$

6. (4 points) Simplify the following expressions

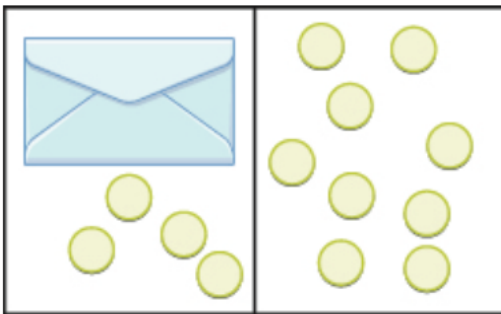
(a)  $20 - 4(15) + 6^2 =$

(b)  $(-3)^2 - 2^2 =$

7. (4 points)

Write and solve the equation demonstrated by the following diagram.

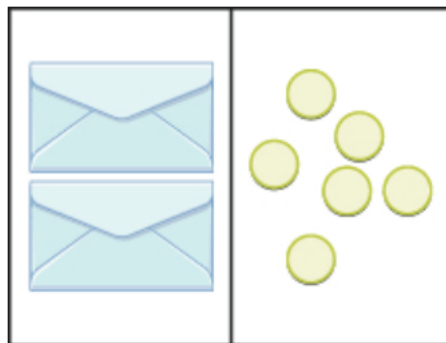
Write your answer as  $x =$



8. (4 points)

Write and solve the equation demonstrated by the following diagram.

Write your answer as  $x =$



**9.** (4 points)

Solve each equation given.

Write your answer as  $m =$ 

(a)  $m + 18 = 34$

(b)  $-5 + m = -26$

**11.** (4 points)

Reduce each fraction to its lowest terms.

(a)  $\frac{4}{10} =$

(b)  $\frac{36}{60} =$

**10.** (4 points)

Solve each equation given.

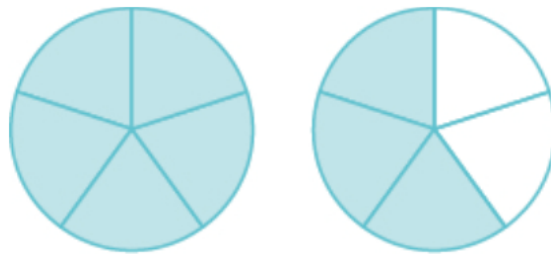
Write your answer as  $x =$ 

(a)  $3x = 42$

(b)  $-9x = -54$

**12.** (4 points)

Write the improper fraction and mixed number for the following diagram



(a) Mixed number:

(b) Improper fraction:

13. (4 points) Write each mixed number as an improper fraction.

(a)  $3\frac{2}{7} =$

(b)  $6\frac{7}{10} =$

15. (4 points) Simplify each expression.

(a)  $\frac{2}{15} + \frac{3}{15} =$

(b)  $\frac{18}{20} - \frac{3}{20} =$

14. (4 points) Simplify each expression.

(a)  $\frac{1}{11} + \frac{3}{11} =$

(b)  $\frac{5}{7} - \frac{2}{7} =$

16. (4 points) Simplify the expression. The work has been started for you.

$$\frac{5}{8} + \frac{1}{12} =$$

$$\begin{array}{r} \frac{5}{8} = \frac{\quad}{24} \\ + \frac{1}{12} = \frac{\quad}{24} \\ \hline \end{array}$$

17. (4 points) Simplify the expression.

$$\frac{19}{24} - \frac{1}{6} =$$

$$\frac{19}{24} = \underline{\hspace{2cm}}$$

$$-\frac{1}{6} = \underline{\hspace{2cm}}$$


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18. (4 points) Simplify the expression.

$$8\frac{5}{7} + 3\frac{1}{7} =$$

$$8\frac{5}{7}$$

$$+3\frac{1}{7}$$


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19. (4 points) Simplify the expression.

$$4\frac{5}{6} + 11\frac{2}{3} =$$

$$4\frac{5}{6} =$$

$$+11\frac{2}{3} =$$


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20. (4 points) Simplify the expression.

$$9\frac{1}{6} - 5\frac{3}{4} =$$

$$9\frac{1}{6} =$$

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


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Addition Table

+	1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10	11
2	3	4	5	6	7	8	9	10	11	12
3	4	5	6	7	8	9	10	11	12	13
4	5	6	7	8	9	10	11	12	13	14
5	6	7	8	9	10	11	12	13	14	15
6	7	8	9	10	11	12	13	14	15	16
7	8	9	10	11	12	13	14	15	16	17
8	9	10	11	12	13	14	15	16	17	18
9	10	11	12	13	14	15	16	17	18	19
10	11	12	13	14	15	16	17	18	19	20

Multiplication Table

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Rules for Signed Numbers

<i>Addition</i>				<i>Subtraction</i>			
Positive	+	Positive	= Positive	$A - B = A + (-B)$			
<b>POSITIVE</b>	+	Negative	= Positive				
Positive	+	<b>NEGATIVE</b>	= Negative				
Negative	+	Negative	= Negative				
Numbers in bold, capital letters have a greater magnitude than nonbold, lower case partner number.							
<i>Multiplication</i>				<i>Division</i>			
Positive	×	Positive	= Positive	Positive	÷	Positive	= Positive
Positive	×	Negative	= Negative	Positive	÷	Negative	= Negative
Negative	×	Positive	= Negative	Negative	÷	Positive	= Negative
Negative	×	Negative	= Positive	Negative	÷	Negative	= Positive

Rules for Fractions

For any real numbers,  $a, b, c,$  and  $d, b \neq 0, c \neq 0,$  and  $d \neq 0$

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

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

$$\frac{a}{b} \cdot \frac{c}{d} = \frac{ac}{bd}$$

$$\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c} = \frac{ad}{bc}$$