

3A

$$\begin{aligned}
 1) \quad & -5A + 3 + 8A - 4 = 9 + 3 - 1 \\
 & (-5A + 8A) + (3 - 4) = 11 \\
 & 3A + (-1) = 11 \\
 & \underline{\quad +1 \quad +1} \\
 & \underline{\quad 3A \quad = 12} \quad A = 4 \\
 & \underline{\quad 3 \quad \quad 3}
 \end{aligned}$$

$$\begin{aligned}
 \text{Check: } & -5(4) + 3 + 8(4) - 4 = 9 + 3 - 1 \\
 & -20 + 3 + 32 - 4 = 9 + 3 - 1 \\
 & 11 = 11
 \end{aligned}$$

Checks for #2 - #14 will not be shown.

$$\begin{aligned}
 2) \quad & 3B - B + 7 + 4B = 43 \\
 & 6B + 7 = 43 \\
 & \underline{\quad -7 \quad -7} \\
 & \underline{\quad 6B \quad = 36} \quad B = 6 \\
 & \underline{\quad 6 \quad \quad 6}
 \end{aligned}$$

$$\begin{aligned}
 3) \quad & -4Y - 6 + 7Y + 3 + Y = 17 \\
 & 4Y - 3 = 17 \\
 & \underline{\quad +3 \quad +3} \\
 & \underline{\quad 4Y \quad = 20} \quad Y = 5 \\
 & \underline{\quad 4 \quad \quad 4}
 \end{aligned}$$

$$\begin{aligned}
 4) \quad & 5Q + 3Q - 6 + 2Q = (2 + 3) + 9 \\
 & 10Q - 6 = 14 \\
 & \underline{\quad +6 \quad +6} \\
 & \underline{\quad 10Q \quad = 20} \quad Q = 2 \\
 & \underline{\quad 10 \quad \quad 10}
 \end{aligned}$$

$$\begin{aligned}
 5) \quad & 6K - 5 + 4K - K + 2 = 12 \cdot 2 \\
 & 9K - 3 = 24 \\
 & \underline{\quad +3 \quad +3} \\
 & \underline{\quad 9K \quad = 27} \quad K = 3 \\
 & \underline{\quad 9 \quad \quad 9}
 \end{aligned}$$

$$\begin{aligned}
 6) \quad & 5C - 2C - 8 + 7 - C = 3 \cdot 4 + 1 \\
 & 2C - 1 = 13 \\
 & \underline{\quad +1 \quad +1} \\
 & \underline{\quad 2C \quad = 14} \quad C = 7 \\
 & \underline{\quad 2 \quad \quad 2}
 \end{aligned}$$

$$\begin{aligned}
 7) \quad & 4A + 6 = 2A + 12 \\
 & 4A - 2A = 12 - 6 \\
 & \underline{\quad 2A \quad = 6} \\
 & \underline{\quad 2 \quad \quad 2} \quad A = 3
 \end{aligned}$$

$$\begin{aligned}
 8) \quad & 10B - 2B + 3 = 5B + 21 \\
 & 8B - 5B = 21 - 3 \\
 & \underline{\quad 3B \quad = 18} \\
 & \underline{\quad 3 \quad \quad 3} \quad B = 6
 \end{aligned}$$

$$\begin{aligned}
 9) \quad & 6C - 8 + 3C = 7C - 2C + 12 \\
 & 9C - 5C = 12 + 8 \\
 & \underline{\quad 4C \quad = 20} \\
 & \underline{\quad 4 \quad \quad 4} \quad C = 5
 \end{aligned}$$

$$\begin{aligned}
 10) \quad & 6D - 10 = -2D - 34 \\
 & 6D + 2D = -34 + 10 \\
 & \underline{\quad 8D \quad = -24} \\
 & \underline{\quad 8 \quad \quad 8} \quad D = -3
 \end{aligned}$$

$$\begin{aligned}
 11) \quad & -3A - 3 - 6A + 10A + 5 = 10 \\
 & A + 2 = 10 \\
 & \underline{\quad -2 \quad -2} \\
 & \underline{\quad A \quad = 8} \quad A = 8
 \end{aligned}$$

$$\begin{aligned}
 12) \quad & -5B - B + 4 + 10B - 7 = 7 \cdot 11 \\
 & 4B - 3 = 77 \\
 & \underline{\quad +3 \quad +3} \\
 & \underline{\quad 4B \quad = 80} \quad B = 20 \\
 & \underline{\quad 4 \quad \quad 4}
 \end{aligned}$$

$$\begin{aligned}
 13) \quad & -4R + 7R - 3 + 5R = 10^2 - 7 \\
 & 8R = 100 - 7 + 3 \\
 & \underline{\quad 8R \quad = 96} \\
 & \underline{\quad 8 \quad \quad 8} \quad R = 12
 \end{aligned}$$

$$\begin{aligned}
 14) \quad & -7Q + 8 - 6 + 5Q = 3 \cdot 5 - 7 \\
 & -2Q + 2 = 8 \\
 & \underline{\quad -2 \quad -2} \\
 & \underline{\quad -2Q \quad = 6} \\
 & \underline{\quad -2 \quad \quad -2} \quad Q = -3
 \end{aligned}$$

3B

$$\begin{aligned}
 1) \quad & -3A - 5 + 4A - 6 + 2A = 19 \\
 & 3A - 11 = 19 \\
 & \underline{\quad +11 \quad +11} \\
 & \underline{\quad 3A \quad = 30} \\
 & \underline{\quad 3 \quad \quad 3} \quad A = 10
 \end{aligned}$$

$$\begin{aligned}
 \text{Check: } & -3(10) - 5 + 4(10) - 6 + 2(10) = 19 \\
 & -30 - 5 + 40 - 6 + 20 = 19 \\
 & 19 = 19
 \end{aligned}$$

Checks for #2 - #14 will not be shown.

$$\begin{aligned}
 2) \quad & 8B - 6 + 5B - 3 - 3B = 41 \\
 & 10B - 9 = 41 \\
 & \underline{\quad +9 \quad +9} \\
 & \underline{\quad 10B \quad = 50} \\
 & \underline{\quad 10 \quad \quad 10} \quad B = 5
 \end{aligned}$$

$$\begin{aligned}
 3) \quad & -5Y + 3 - 6Y + 2Y + 4 = 13 \\
 & -9Y + 7 = 13 \\
 & \underline{\quad -7 \quad -7} \\
 & \underline{\quad -9Y \quad = 6} \\
 & \underline{\quad -9 \quad \quad -9} \quad Y = -2/3
 \end{aligned}$$

$$\begin{aligned}
 4) \quad & 8Q - Q + 7 - 4 - 3Q = 7 + 4 \times 10 \\
 & 4Q + 3 = 47 \\
 & \underline{\quad -3 \quad -3} \\
 & \underline{\quad 4Q \quad = 44} \\
 & \underline{\quad 4 \quad \quad 4} \quad Q = 11
 \end{aligned}$$

$$\begin{aligned}
 5) \quad & 8M - 4M - 6 - 3 + 5M = 8^2 - 1 \\
 & 9M - 9 = 63 \\
 & \underline{\quad +9 \quad +9} \\
 & \underline{\quad 9M \quad = 72} \\
 & \underline{\quad 9 \quad \quad 9} \quad M = 8
 \end{aligned}$$

$$\begin{aligned}
 6) \quad & 7C - 4C + 5 - 8 + C = 5^2 + 4 \\
 & 4C - 3 = 29 \\
 & \underline{\quad +3 \quad +3} \\
 & \underline{\quad 4C \quad = 32} \\
 & \underline{\quad 4 \quad \quad 4} \quad C = 8
 \end{aligned}$$

$$\begin{aligned}
 7) \quad & 11A - 4A - 18 = 2A + A + 10 \\
 & 7A - 3A = 10 + 18 \\
 & \underline{\quad 4A \quad = 28} \\
 & \underline{\quad 4 \quad \quad 4} \quad A = 7
 \end{aligned}$$

$$\begin{aligned}
 8) \quad & 2B - 10B - 15 + 5 = 8B - 40 - 4B - 6 \\
 & -8B - 10 = 4B - 46 \\
 & -8B - 4B = -46 + 10 \\
 & \underline{\quad -12B \quad = -36} \\
 & \underline{\quad -12 \quad \quad -12} \quad B = 3
 \end{aligned}$$

$$\begin{aligned}
 9) \quad & 3C - 6 + 2C = 10C - 2C + 6 \\
 & 5C - 6 = 8C + 6 \\
 & 5C - 8C = 6 + 6 \\
 & \underline{\quad -3C \quad = 12} \\
 & \underline{\quad -3 \quad \quad -3} \quad C = -4
 \end{aligned}$$

$$\begin{aligned}
 10) \quad & 2D - 8 - 5D = -3D - 2D + 6 \\
 & -3D - 8 = -5D + 6 \\
 & -3D + 5D = 6 + 8 \\
 & \underline{\quad 2D \quad = 14} \\
 & \underline{\quad 2 \quad \quad 2} \quad D = 7
 \end{aligned}$$

$$\begin{aligned}
 11) \quad & 8K - 6 + 3K - 2K + 3 = 4 \times 33 \\
 & 9K - 3 = 132 \\
 & \underline{\quad +3 \quad +3} \\
 & \underline{\quad 9K \quad = 135} \\
 & \underline{\quad 9 \quad \quad 9} \quad K = 15
 \end{aligned}$$

$$\begin{aligned}
 12) \quad & B + B + B + 6 = 6B + 5 - 2B + 9 \\
 & 3B + 6 = 4B + 14 \\
 & 6 - 14 = 4B - 3B \\
 & -8 = B \quad B = -8
 \end{aligned}$$

$$\begin{aligned}
 13) \quad & -2C + 12 = 2C - 6 + 6C - 12 \\
 & -2C + 12 = 8C - 18 \\
 & -2C - 8C = -18 - 12 \\
 & \underline{\quad -10C \quad = -30} \\
 & \underline{\quad -10 \quad \quad -10} \quad C = 3
 \end{aligned}$$

$$\begin{aligned}
 14) \quad & 10X - 3X - 9 + 3 - X = 51 \div 3 + 1 \\
 & 6X - 6 = 18 \\
 & \underline{\quad +6 \quad +6} \\
 & \underline{\quad 6X \quad = 24} \\
 & \underline{\quad 6 \quad \quad 6} \quad X = 4
 \end{aligned}$$

## 3C

1) 
$$\begin{aligned} X + 3 &= 9 \\ X + 3 - 3 &= 9 - 3 \\ X &= 6 \end{aligned}$$

2) 
$$\begin{aligned} X + 6 &= 10 \\ X + 6 - 6 &= 10 - 6 \\ X &= 4 \end{aligned}$$

3) 
$$\begin{aligned} 2X + 5 &= 11 \\ 2X + 5 - 5 &= 11 - 5 \\ 2X &= 6 \\ 2X \div 2 &= 6 \div 2 \\ X &= 3 \end{aligned}$$

4) 
$$\begin{aligned} 4Q - 2 &= 10 \\ 4Q - 2 + 2 &= 10 + 2 \\ 4Q &= 12 \\ 4Q \div 4 &= 12 \div 4 \\ Q &= 3 \end{aligned}$$

5) 
$$\begin{aligned} 4X + 2 &= 2X + 8 \\ 4X + 2 - 2 &= 2X + 8 - 2 \\ 4X &= 2X + 6 \\ 4X - 2X &= 2X - 2X + 6 \\ 2X &= 6 \\ 2X \div 2 &= 6 \div 2 \\ X &= 3 \end{aligned}$$

6) 
$$\begin{aligned} 3Y + 5 &= 2Y + 7 \\ 3Y + 5 - 5 &= 2Y + 7 - 5 \\ 3Y &= 2Y + 2 \\ 3Y - 2Y &= 2Y - 2Y + 2 \\ Y &= 2 \end{aligned}$$

7) 
$$\begin{aligned} Q + 4 &= 3Q - 6 \\ Q + 4 - Q &= 3Q - Q - 6 \\ 4 &= 2Q - 6 \\ 4 + 6 &= 2Q - 6 + 6 \\ 10 &= 2Q \\ 10 \div 2 &= 2Q \div 2 \\ 5 &= Q \end{aligned}$$

8) 
$$\begin{aligned} 2R + 8 &= 3R - 2 \\ 2R - 2R + 8 &= 3R - 2R - 2 \\ 8 &= R - 2 \\ 8 + 2 &= R - 2 + 2 \\ 10 &= R \end{aligned}$$

9) 
$$\begin{array}{rcl} 9 - 3 & \textcircled{<} & |4 - 11| \\ 6 & & |-7| \\ 6 & < & 7 \end{array}$$

10) 
$$\begin{array}{rcl} |1 - 2 - 3| & \textcircled{<} & |2 \times 3| \\ |-4| & & |6| \\ 4 & < & 6 \end{array}$$

11) 
$$\begin{aligned} (-3) \times 4 + 6^2 \times (-3) + 5^2 &= \\ -3 \times 4 + 36 \times (-3) + 25 &= \\ -12 + (-108) + 25 &= -120 + 25 = -95 \end{aligned}$$

12) 
$$\begin{aligned} 14 - 9 + 2^2 - (3 \div 6 \times 2^2) &= \\ (14 - 9 + 4) - (3 \div 6 \times 4) &= \\ 9 - (3/6 \times 4) &= 9 - (1/2 \times 4) = 9 - 2 = 7 \end{aligned}$$

13) 
$$\begin{aligned} \frac{4}{3} \times \frac{6}{10} \div \frac{2}{3} &= \\ \frac{2 \cancel{A}}{\cancel{3}} \times \frac{\cancel{6} \cancel{B}^1}{\cancel{10}^5} \times \frac{3}{\cancel{2}^1} &= \frac{6}{5} = 1 \frac{1}{5} \end{aligned}$$

14) 
$$\begin{array}{r} .17 \\ \underline{- .8} \\ .136 \end{array}$$

(three decimal places in answer)

15) 
$$(-8)(-7) = 56$$

16) 
$$(-4)^2 = (-4)(-4) = 16$$

17)  $2 = 2, 3 = 3, 4 = 2 \times 2$ , so LCM  $= 2 \times 2 \times 3 = 12$

$$(12) \frac{1}{2} + (12) \frac{2}{3} = 3(12) \frac{1}{4} X$$

(It is not necessary to write in "1" when dividing terms unless you wish.)

$6 + 8 = 3X, \quad X = 4 \frac{2}{3}$

18)  $2, 5, 4 = 2 \times 2$ , so LCM  $= 2 \times 2 \times 5 = 20$

$$(20) \frac{3}{5} X + (20) \frac{3}{4} = 10(20) \frac{3}{2}$$

$12X + 15 = 30, \quad X = 1 \frac{1}{4}$

19)  $3, 5, 9 = 3 \times 3$ , so LCM  $= 3 \times 3 \times 5 = 45$

$$(45) \frac{1}{9} X + (45) \frac{2}{3} = 9(45) \frac{1}{5}$$

$5X + 30 = 9, \quad X = 4 \frac{1}{5}$

20)  $4, 4 = 2 \times 2, 8 = 2 \times 2 \times 2$ ,  
so LCM  $= 2 \times 2 \times 2 \times 5 = 40$

$$(40) \frac{3}{8} - (40) \frac{1}{5} X = 10(40) \frac{3}{4}$$

$-8X = 15, \quad X = -1 \frac{7}{8}$

## 3D

1) 
$$\begin{aligned} Y - 3 &= 10 \\ Y - 3 + 3 &= 10 + 3 \\ Y &= 13 \end{aligned}$$

2) 
$$\begin{aligned} 2B - 5 &= 13 \\ 2B &= 18 \\ 2B \div 2 &= 18 \div 2 \\ B &= 9 \end{aligned}$$

3) 
$$\begin{aligned} 3C + 6 &= -9 \\ 3C &= -15 \\ 3C \div 3 &= -15 \div 3 \\ C &= -5 \end{aligned}$$

4) 
$$\begin{aligned} 2D - 5 &= 1 \\ 2D &= 6 \\ 2D \div 2 &= 6 \div 2 \\ D &= 3 \end{aligned}$$

5) 
$$\begin{aligned} 4E - 3 &= -3 \\ 4E &= 0 \\ E &= 0 \end{aligned}$$

6) 
$$\begin{aligned} 3X + 8 &= -2X - 2 \\ 3X + 2X &= -2X + 2X - 10 \\ 5X &= -10 \\ 5X \div 5 &= -10 \div 5 \\ X &= -2 \end{aligned}$$

7) 
$$\begin{aligned} 2Y - 2 &= 3Y - 6 \\ 2Y - 3Y &= -6 + 2 \\ -Y &= -4 \\ (-1)(-Y) &= (-1)(-4) \\ Y &= 4 \end{aligned}$$

8) 
$$\begin{aligned} Z + 8 &= 2Z + 18 \\ Z - 2Z &= 18 - 8 \\ -Z &= 10 \\ Z &= -10 \end{aligned}$$

9) 
$$\begin{array}{ccc} |3 \times 2 \times (-2)| & \textcircled{>} & 24 \div (-3) \\ |-12| & & -8 \\ 12 & > & -8 \end{array}$$

10) 
$$\begin{array}{ccc} |17 - 3 - 20| & \textcircled{<} & |7 + 0 + 1| \\ |-6| & & |8| \\ 6 & < & 8 \end{array}$$

11) 
$$\begin{aligned} [(6 - 2) \times 5^2 - 10] \div 5^2 &= \\ [4 \times 25 - 10] \div 25 &= \\ [100 - 10] \div 25 &= 90 \div 25 = 3 \frac{3}{5} \text{ or } 3.6 \end{aligned}$$

12) 
$$\begin{aligned} (-7 - 6)^2 - (4 + 5 - 3)^2 &= \\ (-13)^2 - 6^2 &= 169 - 36 = 133 \end{aligned}$$

13) 
$$\begin{aligned} \frac{5}{6} \times \frac{3}{7} \div \frac{2}{3} &= \\ \frac{5}{6} \times \frac{3}{7} \times \frac{3}{2} &= \frac{15}{28} \end{aligned}$$

14) 
$$\begin{array}{r} 14. \\ 12 \sqrt{168} \\ \hline 12 \\ 48 \end{array}$$

15)  $2 = 2, 5 = 5, 10 = 2 \times 5$ , so LCM  $= 2 \times 5 = 10$

16) 
$$\begin{aligned} (\frac{6}{8}) X + (\frac{7}{10}) \frac{5}{2} X &= \frac{5}{10} X \\ 12X + 7 &= 25X, \quad X = 7/13 \end{aligned}$$

17)  $100 = 10 \times 10, 1000 = 10 \times 10 \times 10$   
LCM  $= 10 \times 10 \times 10 = 1000$

$$\begin{aligned} 1000(.83) + 1000(.04X) &= 1000(.325) \\ 830 + 40X &= 325 \\ 40X &= -505, \quad X = -12.625 \text{ or } -12 \frac{5}{8} \end{aligned}$$

18)  $10 = 10, 100 = 10 \times 10$   
LCM  $= 10 \times 10 = 100$

$$\begin{aligned} 100(.18) + 100(.2X) &= 100(.17) \\ 18 + 20X &= 17 \\ 20X &= -1, \quad X = -.05 \text{ or } -1/20 \end{aligned}$$

19)  $10 = 10, 100 = 10 \times 10$   
LCM  $= 10 \times 10 = 100$

$$\begin{aligned} 100(.8X) + 100(1.3) &= 100(7) + 100(.24) \\ 80X + 130 &= 700 + 24 \\ 80X &= 594, \quad X = 7.425 \text{ or } 7 \frac{17}{40} \end{aligned}$$

20)  $10 = 10, 100 = 10 \times 10$   
LCM  $= 10 \times 10 = 100$

$$\begin{aligned} 100(8.2) - 100(4) &= 100(.08X) \\ 820 - 400 &= 8X \\ 420 &= 8X, \quad X = 52.5 \text{ or } 52 \frac{1}{2} \end{aligned}$$

3E

1)  $-2X + 7 + 3X - 4 = 10 - 1$   
 $X + 3 = 9$   
 $X = 6$

2)  $3Y + 8 - 2 - 2Y = 9 - 4 + 5$   
 $Y + 6 = 10$   
 $Y = 4$

3)  $2X - 2 + 7 + X - X = 6 + 6 - 1$   
 $2X + 5 = 11$   
 $2X = 6$   
 $X = 3$

4)  $-2B + 3 + 5B + 1 = 2(3 + 2) + 9$   
 $3B + 4 = 2(5) + 9$   
 $3B = 19 - 4$   
 $3B = 15$   
 $B = 5$

5)  $3Q - 2 + Q = 3(2 + 2) - 2$   
 $4Q - 2 = 3(4) - 2$   
 $4Q = 12$   
 $Q = 3$

6)  $5X + 5 - X - 3 = 3X - X + 4(2)$   
 $4X + 2 = 2X + 8$   
 $2X = 6$   
 $X = 3$

7)  $2Y - 4 + Y + 9 = -2Y - 4 + 4Y + 11$   
 $3Y + 5 = 2Y + 7$   
 $3Y - 2Y = 7 - 5$   
 $Y = 2$

8)  $-4Q + 2 + 5Q + 2 = 3Q - 6$   
 $Q + 4 = 3Q - 6$   
 $4 = 2Q - 6$   
 $10 = 2Q$   
 $5 = Q$

9)  $(7 - 3)^2 \times |3 - 7| =$   
 $(4)^2 \times |-4| = 16 \times 4 = 64$

10)  $8 + (5 + 4)^2 \times 2 + 11^2 =$   
 $8 + 9^2 \times 2 + 121 = 8 + 81 \times 2 + 121 =$   
 $8 + 162 + 121 = 291$

11)  $(4 \times 8 - 6 + 3^2) + (3 - 6 - 7^2 \times 3 + 4) =$   
 $(4 \times 8 - 6 + 9) + (3 - 6 - 49 \times 3 + 4) =$   
 $(32 - 6 + 9) + (3 - 6 - 147 + 4) =$   
 $35 + (-146) = -111$

12)  $(15 - 6 + 8^2 + 3 \div 3) - (10 + 9^2 - 40 \div 8) =$   
 $(15 - 6 + 64 + 3 \div 3) - (10 + 81 - 40 \div 8) =$   
 $(15 - 6 + 64 + 1) - (10 + 81 - 5) =$   
 $74 - 86 = -12$

13)  $\frac{3}{4} \times \frac{8}{3} \div \frac{2}{1} =$   
 $\frac{\cancel{3}}{\cancel{4}} \times \frac{\cancel{8}^2}{\cancel{3}} \times \frac{1}{\cancel{2}} = \frac{1}{1} = 1$

14)  $\frac{1.7}{.8}$   
 $\frac{5}{8}$   
 $\frac{6}{6}$   
 $1.36$  (two decimal places in answer)

15)  $(-19)(6) = -114$

16)  $-6^2 = -(6)(6) = -36$

17)  $-[-(-6)] = -[+6] = -6$

18)  $-7 - (-3) = -7 + 3 = -4$

19)  $3, 6 = 2 \times 3, 8 = 2 \times 2 \times 2,$   
 $\text{so LCM} = 2 \times 2 \times 2 \times 3 = 24$   
 $(24) \frac{7}{8} + (24) \frac{8}{3} - X = (24) \frac{1}{6}$   
 $21 + 16X = 4, \quad 16X = -17, \quad X = -1 \frac{1}{16}$

20)  $10 = 10, 100 = 10 \times 10$   
 $\text{LCM} = 10 \times 10 = 100$

100(.03X) - 100(.6) = 100(.75)  
 $3X - 60 = 75$   
 $3X = 135, \quad X = 45$

4A

1)  $5(4 + 3) = 5(4) + 5(3)$   
 $2) 6(2 + 3 + 1) = 6(2) + 6(3) + 6(1)$

3)  $7(A + B) = 7A + 7B$   
 $4) 3(4C + 3B) = 3(4C) + 3(3B)$

5)  $5(2X + 3Y - 3 + 4X) =$   
 $5(2X) + 5(3Y) - 5(3) + 5(4X)$

6)  $8(A + 3B + 8 + 4A) =$   
 $8(A) + 8(3B) + 8(8) + 8(4A)$

7)  $6X + 6Y = 6(X + Y)$

8)  $8A + 16B = 8(A + 2B)$

9)  $14X + 21Y = 7(2X + 3Y)$

10)  $-2M - 6N = -2(M + 3N)$

11)  $6B + 18C = 6(B + 3C)$

12)  $15X + 10A = 5(3X + 2A)$

13)  $5X + 15 = 45$   
 $5(X + 3) = 5(9)$   
 $X + 3 = 9, \quad X = 6$

14)  $10X + 16 = 26$   
 $2(5X + 8) = 2(13)$   
 $5X + 8 = 13, \quad 5X = 5, \quad X = 1$

15)  $13Y - 26 + 39Y = 52$   
 $13(Y - 2 + 3Y) = 13(4)$   
 $4Y - 2 = 4$   
 $4Y = 6, \quad Y = 1 \frac{1}{2}$

16)  $8A - 10 - 6A = 14$   
 $2(4A - 5 - 3A) = 2(7)$   
 $A - 5 = 7, \quad A = 12$

17)  $12X + 21 = 30$   
 $3(4X + 7) = 3(10)$   
 $4X + 7 = 10$   
 $4X = 3, \quad X = 3/4$

18)  $8X - 28 = 12$   
 $4(2X - 7) = 4(3)$   
 $2X - 7 = 3$   
 $2X = 10, \quad X = 5$

4B

1)  $8(5 + 2) = 8(5) + 8(2)$   
 $2) 5(4 - 3 + 2) = 5(4) - 5(3) + 5(2)$

3)  $9(C + D) = 9(C) + 9(D)$   
 $4) 5(2C + 4D) = 5(2C) + 5(4D)$

5)  $3(X + Y + 4X) = 3(X) + 3(Y) + 3(4X)$   
 $6) -2(3X + 2Y + Y) =$   
 $(-2)(3X) + (-2)(2Y) + (-2)(Y)$

7)  $8X + 12Y = 4(2X + 3Y)$

8)  $-7X - 21Y = 7(-X - 3Y) \text{ or } -7(X + 3Y)$

9)  $18A + 24B = 6(3A + 4B)$

10)  $8X + 10 = 16$   
 $2(4X + 5) = 2(8)$

11)  $6A + 3 = 15$   
 $3(2A + 1) = 3(5)$

12)  $8A + 10 = 20$   
 $2(4A + 5) = 2(10)$

13)  $8X + 32 = 40$   
 $8(X + 4) = 8(5)$   
 $X + 4 = 5, \quad X = 1$

14)  $18Y + 27 = 45$   
 $9(2Y + 3) = 9(5)$   
 $2Y + 3 = 5,$   
 $2Y = 2, \quad Y = 1$

15)  $15X - 10 + 5X = 25$   
 $5(3X - 2 + X) = 5(5)$   
 $4X = 7, \quad X = 1 \frac{3}{4}$

16)  $9C - 6 - 12C = 18$   
 $3(3C - 2 - 4C) = 3(6)$   
 $-C - 2 = 6, \quad -C = 8, \quad C = -8$

17)  $14M - 42 + 56M = 28$   
 $14(M - 3 + 4M) = 14(2)$   
 $5M - 3 = 2$   
 $5M = 5, \quad M = 1$

18)  $6A - 16 - 4A = 20$   
 $2(3A - 8 - 2A) = 2(10)$   
 $A - 8 = 10, \quad A = 18$