Name _____ Date _____

Additional Exercises 2.3
Form I
Solving Linear Equations

Solve the equation.

1. $7x-(3x-1)=2$ 1. _____

2. $6(4x-1)=24$ 2. _____

3. $(y-2)-(y+8)=4y$ 3. _____

4. $3(5x-2)=9$ 4. _____

5. $2(2+4x)=52$ 5. _____

6. $-2(2x-1)=-4$ 6. _____

7. $3x-10=5(x-4)$ 7. _____

8. $4(2x-3)=20$ 8. _____

Solve each equation. Begin your work by rewriting each equation without fractions.

9. $\frac{f}{5}-4=1$ 9. _____

10. $\frac{2x}{5}-\frac{x}{3}=3$ 10. _____

11. $\frac{x}{7}=10-\frac{x}{3}$ 11. _____

12. $\frac{x}{3}-1=-\frac{x}{2}$ 12. _____

13. $\frac{3x}{10}-\frac{1}{2}=\frac{x}{5}$ 13. _____

14. $\frac{x}{2}=\frac{x+5}{3}$ 14. _____

15. $\frac{2x}{3}+\frac{5}{6}=\frac{3x}{2}$ 15. _____

Name _____ Date _____

16. Forensic scientists use the length of certain bones to calculate the height of a person. When the femur (*f*), the bone from the knee to the hip socket is used, the following formula applies for men: $h = 69.09 + 2.24f$, where *h* is the height and *f* is the length of the femur. Find the height of a man with a femur measuring 59 centimeters.

16. _____

17. There is a formula that gives a correspondence between women's shoe sizes in the United States and those in Italy. The formula is $S = 2(x + 12)$, where *S* is the size in Italy and *x* is the size in the United States. What would be the US size for an Italian size of 32?

17. _____

18. In one state, speeding fines are determined by the formula $F = 6(x - 60) + 75$, where *F* is the cost, in dollars, of the fine if a person is caught driving *x* miles per hour. If the fine comes to $249, how fast was the person driving?

18. _____

19. When you buy an item on which sales tax is charged, the total cost is calculated by the formula $T = P + \frac{S}{100}P$, where *T* is the total cost, *P* is the item's price, and *S* is the sales tax rate (as a percent). If you pay $20.045 for an item priced at $19, what is the tax rate?

19. _____

20. To convert a Fahrenheit temperature to Celsius, one formula to use is $F = \frac{9}{5}C + 32$ where *F* is the Fahrenheit temperature (in degrees) and *C* is the Celsius temperature. What is the Celsius temperature (to the nearest degree) when Fahrenheit temperature is 86°?

20. _____

Name _____ Date _____

Additional Exercises 2.3
Form II
Solving Linear Equations

Solve the equation.

1. $9(x+2)=3(x-2)$ 1. _____

2. $7(5x-2)=6(6x-1)$ 2. _____

3. $2(x+1)=29-x$ 3. _____

4. $13(6x-7)=8x-2$ 4. _____

5. $4(x+3)=5(x-7)$ 5. _____

6. $4(2x-2)=7(x+2)$ 6. _____

7. $5(3+x)-x=4(x+2)+7$ 7. _____

8. $2(6x-3)=3(4x+7)$ 8. _____

Solve each equation. Begin your work by rewriting each equation without fractions.

9. $\frac{x}{3}+\frac{x}{4}=\frac{7}{4}$ 9. _____

10. $\frac{3x}{5}=\frac{1}{20}+\frac{x}{2}$ 10. _____

11. $\frac{x}{5}-\frac{1}{5}=-3$ 11. _____

12. $\frac{x}{7}-7=-3$ 12. _____

13. $\frac{2x}{5}=\frac{x}{3}+5$ 13. _____

14. $3x-1=\frac{x}{5}+\frac{4x}{5}$ 14. _____

15. $\frac{x+3}{3}-\frac{x}{4}=\frac{x-2}{5}$ 15. _____

Name _____ Date _____

16. Forensic scientists use the length of certain bones to calculate the height of a person. When the femur (*f*), the bone from the knee to the hip socket is used, the following formula applies for men: $h = 69.09 + 2.24f$, where *h* is the height and *f* is the length of the femur. Find the height of a man with a femur measuring 57 centimeters.

16. _____

17. There is a formula that gives a correspondence between women's shoe sizes in the United States and those in Italy. The formula is $S = 2(x + 12)$, where *S* is the size in Italy and *x* is the size in the United States. What would be the US size for an Italian size of 30?

17. _____

18. In one state, speeding fines are determined by the formula $F = 6(x - 60) + 75$, where *F* is the cost, in dollars, of the fine if a person is caught driving *x* miles per hour. If the fine comes to $225, how fast was the person driving?

18. _____

19. When you buy an item on which sales tax is charged, the total cost is calculated by the formula $T = P + \frac{S}{100}P$, where *T* is the total cost, *P* is the item's price, and *S* is the sales tax rate (as a percent). If you pay $20.235 for an item priced at $19, what is the tax rate?

19. _____

20. To convert a Fahrenheit temperature to Celsius, one formula to use is $F = \frac{9}{5}C + 32$ where *F* is the Fahrenheit temperature (in degrees) and *C* is the Celsius temperature. What is the Celsius temperature (to the nearest degree) when Fahrenheit temperature is 95°?

20. _____

Name _____ Date _____

Additional Exercises 2.3
Form III
Solving Linear Equations

Solve the equation.

1. $7(x-3)-2x=5(x-3)$ 1. _____

2. $3(x-4)=6(x-3)$ 2. _____

3. $3(x+2)-4x=x+16$ 3. _____

4. $5x+2(1-x)=2(2x-1)$ 4. _____

5. $4(x+2)=14-2(3-2x)$ 5. _____

6. $5(x+3)+9=3(x-2)+6$ 6. _____

7. $5(2z-2)=9(z+3)$ 7. _____

8. $-3x+7(-3x-7)=-68-5x$ 8. _____

Solve each equation. Begin your work by rewriting each equation without fractions.

9. $\frac{1}{2}x+2-\frac{2}{3}x+\frac{2}{3}=3$ 9. _____

10. $\frac{1}{4}x-1=\frac{1}{2}x+\frac{3}{2}$ 10. _____

11. $2x-\frac{10}{3}=6-\frac{1}{3}x$ 11. _____

12. $\frac{1}{4}x-\frac{1}{12}=\frac{1}{6}x+\frac{1}{6}$ 12. _____

13. $\frac{5}{2}=\frac{3}{2}x+\frac{7}{4}$ 13. _____

14. $\frac{r}{5}+\frac{6}{5}=\frac{r}{7}+\frac{8}{7}$ 14. _____

15. $\frac{y}{5}-\frac{2}{5}=\frac{1}{3}-y$ 15. _____

Name _____ Date _____

16. Forensic scientists use the length of certain bones to calculate the height of a person. When the femur (*f*), the bone from the knee to the hip socket is used, the following formula applies for men: $h = 69.09 + 2.24f$, where *h* is the height and *f* is the length of the femur. Find the height of a man with a femur measuring 53 centimeters. 16. _____

17. There is a formula that gives a correspondence between women's shoe sizes in the United States and those in Italy. The formula is $S = 2(x + 12)$, where *S* is the size in Italy and *x* is the size in the United States. What would be the US size for an Italian size of 34? 17. _____

18. In one state, speeding fines are determined by the formula $F = 6(x - 60) + 75$, where *F* is the cost, in dollars, of the fine if a person is caught driving *x* miles per hour. If the fine comes to $261, how fast was the person driving? 18. _____

19. When you buy an item on which sales tax is charged, the total cost is calculated by the formula $T = P + \frac{S}{100}P$, where *T* is the total cost, *P* is the item's price, and *S* is the sales tax rate (as a percent). If you pay $20.425 for an item priced at $19, what is the tax rate? 19. _____

20. To convert a Fahrenheit temperature to Celsius, one formula to use is $F = \frac{9}{5}C + 32$ where *F* is the Fahrenheit temperature (in degrees) and *C* is the Celsius temperature. What is the Celsius temperature (to the nearest degree) when Fahrenheit temperature is 77°? 20. _____