LESSON PRACTICE

Factor each polynomial and check by multiplying.

1. $X^2 - 7X + 10$

2. $X^2 - 7X + 6$

3. $X^2 - 9X + 14$

4. $X^2 - 7X + 12$

5. $X^2 - 9X + 8$

6. $X^2 - 10X + 21$

7. $X^2 - 12X + 27$

8. $X^2 - 11X + 30$

9. $X^2 - 19X + 90$

10. $X^2 - 14X + 33$

11. $X^2 + 4X - 21$

12. $X^2 + 2X - 35$

13. $X^2 + 3X - 18$

14. $X^2 - 5X - 36$

15. $2X^2 - 9X - 5$

16. $2X^2 + 5X - 12$

LESSON PRACTICE

Factor each polynomial and check by multiplying.

1. $X^2 - 6X + 8$

2. $X^2 - 18X + 80$

3. $X^2 - 8X + 15$

4. $X^2 - 9X + 20$

5. $X^2 - 10X + 9$

6. $X^2 - 4X + 3$

7. $X^2 - 16X + 55$

8. $X^2 - 20X + 96$

9. $X^2 - 13X + 42$

10. $X^2 - 11X + 24$

11. $X^2 + 2X - 3$

12. $X^2 + 3X - 18$

13. $X^2 - X - 20$

14. $X^2 + 2X - 15$

15. $5X^2 + 9X - 2$

16. $4X^2 + 7X - 2$

Build a rectangle and find the factors.

1. $X^2 - 3X - 10 = (\quad - \quad)(\quad + \quad)$

2. $X^2 + 3X - 4 = (\quad - \quad)(\quad + \quad)$

Build a rectangle and find the area (product).

3. $(X - 3)(X - 9) =$

4. $(X - 3)(X - 3) =$

5. Find the factors: $X^2 + X - 2$.

6. Check #5 by multiplying the factors to find the product.

7. Find the factors: $X^2 + 3X - 10$.

8. Check #7 by multiplying the factors to find the product.

9. Find the factors: $2X^2 + 7X + 3$.

10. Check #9 by multiplying the factors to find the product.

Simplify each expression.

11. $3^4 \times 3^{-2} \div 3^3 =$

12. $\dfrac{7^{-10}}{7^5} =$

13. $\dfrac{A^5B^2A^{-4}}{A^3B^7} =$

Simplify each term, then add like terms.

14. $2AB^{-2} + \dfrac{4B^{-1}}{B^{-1}A^{-1}} + \dfrac{3A^2}{B^2A^1} =$

15. $3Y = 2X + 7$ and $Y = -4X$. Solve for both X and Y using substitution.

16. Find three consecutive odd integers such that seven times the second, plus two times the first, minus six times the third, equals negative one.

17. Twelve coins made up of nickels and dimes have a value of $.95. How many are there of each coin?

18. Solve: two-thirds divided by five-sixths times one-half.

19. Solve for X: $.2X - .02X + 1.4 = 2.09$

20. 5 1/2 % of 400 = (*Hint:* Change the percent to a decimal before solving.)

SYSTEMATIC REVIEW

Build a rectangle and find the factors.

1. $X^2 - X - 2 = (\quad - \quad)(\quad + \quad)$

2. $X^2 + 2X - 3 = (\quad - \quad)(\quad + \quad)$

Build a rectangle and find the area (product).

3. $(X - 3)(X + 9) =$

4. $(X - 5)(X + 6) =$

5. Find the factors: $X^2 - 3X - 4$.

6. Check #5 by multiplying the factors to find the product.

7. Find the factors: $X^2 - 2X - 3$.

8. Check #7 by multiplying the factors to find the product.

9. Find the factors: $X^2 - X - 6$.

10. Check #9 by multiplying the factors to find the product.

Simplify each expression.

11. $(10^2)^7 =$

12. $\left[(5^2)^4\right]^3 =$

13. $\dfrac{D^{-4}D^3D^{-2}}{D^4D^{-5}} =$

Simplify each term, then add like terms.

14. $BB^2 + \dfrac{3B^{-1}}{B^{-4}} + \dfrac{5B^4}{B^{-1}} =$

15. $Y = -4X + 5$ and $2Y = 4X - 3$. Solve for X and Y.

16. Find three consecutive integers such that four times the second, plus three times the third, minus eight times the first, plus eleven, equals zero.

17. Forty-five coins made up of nickels and dimes have a value of $3.30. How many are there of each coin?

18. Solve: one-half divided by one-half times three-fourths.

19. Solve for X: $1.03X + .2X - .73X = .45$

20. $5\frac{2}{5}\%$ of 250 =

(*Hint:* Change the percent to a decimal before solving)

Build a rectangle and find the factors.

1. $X^2 - 2X - 3 = (\quad - \quad)(\quad + \quad)$

2. $X^2 + 3X - 4 = (\quad - \quad)(\quad + \quad)$

Build a rectangle and find the area (product).

3. $(X - 4)(X + 2) =$

4. $(X - 3)(X + 5) =$

5. Find the factors: $X^2 - 7X + 10$.

6. Check #5 by multiplying the factors to find the product.

7. Find the factors: $3X^2 - 10X + 7$.

8. Check #7 by multiplying the factors to find the product.

9. Find the factors: $3X^2 + 15X - 18$.

10. Check #9 by multiplying the factors to find the product.

Simplify each expression.

11. $5^4 \times 5^{-6} \div 5^2 =$

12. $\frac{1}{6^{-1}} =$

Simplify each term, then add like terms.

13. $4Q^{-1}Y^{-2} + \frac{5QY^{-3}}{Q^{-1}Y^{-2}} =$

14. $5M^4N^2M^{-1} + \frac{2NM^4}{N^{-3}M} =$

15. $X - Y = -2$ and $3X + Y = 18$. Solve for X and Y.

16. Find three consecutive odd integers such that eleven times the first, plus two times the second, equals six times the third, plus one.

17. Fourteen coins made up of quarters and dimes have a value of $2.00. How many are there of each coin?

18. Solve: three-sevenths times fourteen-fifteenths divided by one-half.

19. Solve for F: $36 - 8F = 20F + 12$

20. 6.8% of 95 =

12. $-24 + 56 = 16Q$

13. $-36 = 72A + 45$

14. Find the least common multiple (LCM) of 10 and 100.

15. Multiply this equation by the answer to #14 and solve: $.2X - .03 = .97$

16. Find the LCM of 3, 4, and 6.

17. Multiply this equation by the answer to #16 and solve: $\frac{3}{4} + \frac{1}{3}Q = \frac{5}{6}$

18. Find the LCM of 10 and 100.

19. Multiply this equation by the answer to #18 and solve: $-.7A + .8A = .12$

20. Divide 75.6 feet of fence by 4 to find the dimensions of a square garden enclosed by the fence.

SYSTEMATIC REVIEW

Distribute.

1. $3(A - B - 2) =$

2. $5(3A - 9 + 2A) =$

3. $Q(X + 3) =$

4. $-(-A - B + 2C) =$

Find the greatest common factor (reverse of distributing).

5. $10X - 25Y = 40$

6. $24A + 12B = 36$

7. $-14Q - 21D = -42$

8. $3X + 4XY = 7X$

Divide by the greatest common factor (GCF) and solve for the unknown.

9. $22X + 33 = 44$

10. $7Q - 15 = 9 - 5Q$
(*Hint:* First combine like terms.)

11. $30Y - 10 = 10$

12. $56B - 49 = 28$

13. Find the least common multiple (LCM) of 10 and 100.

14. Multiply this equation by the answer to #13 and solve:
$.3X - 1.2 = .34$

15. Find the LCM of 4, 6, and 10.

16. Multiply this equation by the answer to #15 and solve: $-\frac{3}{4}+\frac{1}{6}R=\frac{7}{10}$

17. Gum balls are 5¢ apiece. How many can Zarah buy with $3.75?

QUICK REVIEW

A number may be expressed as a fraction, a decimal, or a percent.

EXAMPLE 1

Write $\frac{1}{2}$ as a decimal and a percent. $\frac{1}{2}=\frac{50}{100}=.50=50\%$

Write 85% as a decimal and a fraction. $85\%=.85=\frac{85}{100}=\frac{17}{20}$

Write 250% as a decimal and a fraction. $250\%=2.50=\frac{250}{100}=2\frac{1}{2}$

Fill in the blanks.

18. $\frac{1}{4}=\frac{\quad}{100}=.\_\_\_=\_\_\_\%$

19. $40\%=.\_\_\_=\frac{\quad}{100}=\_\_\_$

20. $125\%=\_\_\_=\frac{\quad}{100}=1\_\_\_$

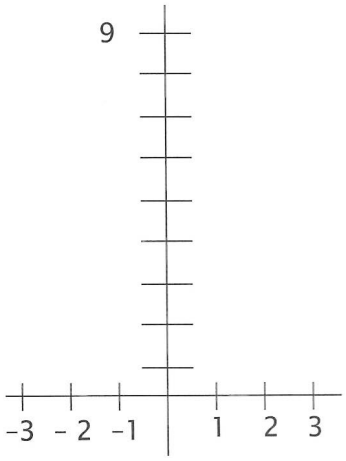
Here are two more exponential equations to graph.

Follow the directions.

1. **Given:** $Y = 2^X + 1$.
   Find the value of Y for each value of X, and fill in the chart.

X	Y
0	
1	
2	
3	
-1	
-2	
-3	

2. Plot the points from the chart on the graph and connect them with a curved line.



3. What happens to the Y values as the X values get smaller?

4. What happens to the Y values as the X values get larger?

5. **Given:** $Y = 3^X$.
   Find the value of Y for each value of X, and fill in the chart.

X	Y
0	
1	
2	
3	
4	
-1	
-2	

6. Plot the points from the chart on the graph and connect them with a curved line.