Find the factors and check by multiplying. (You will not have enough blocks to build some of these.)

1. $X^2 + 10X + 16$

2. $X^2 + 11X + 28$

3. $X^2 + 13X + 22$

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

5. $X^2 + 8X + 15$

6. $X^2 + 11X + 30$

7. $X^2 + 5X + 4$

8. $X^2 + 6X + 5$

9. $X^2 + 8X + 16$

10. $X^2 + 12X + 20$

11. $X^2 + 11X + 18$

12. $X^2 + 17X + 30$

13. $X^2 + 7X + 10$

14. $X^2 + 2X + 1$

15. $X^2 + 10X + 25$

16. $X^2 + 26X + 25$

Build a rectangle and find the factors.

1. $X^2 + 7X + 12 = ($ $+$ $)($ $+$ $)$

2. $X^2 + 10X + 16 = ($ $+$ $)($ $+$ $)$

3. $X^2 + 11X + 24 = ($ $+$ $)($ $+$ $)$

4. $X^2 + 8X + 12 = ($ $+$ $)($ $+$ $)$

Build a rectangle and find the area (product).

5. $(X + 4)(X + 2) =$

6. $(X + 5)(X + 3) =$

7. Find the factors: $X^2 + 7X + 6$.

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

9. Find the factors: $X^2 + 2X + 1$.

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

Add.

11. $2X^2 - 7X - 3$
    $+ X^2 + 5X + 9$

12. $6X^2 + 2X + 1$
    $+ X^2 - 4X + 3$

When simplifying expressions with exponents, write your answer on one line unless otherwise instructed.

13. Simplify: $(P^{-4})^2 P^3 P^1$

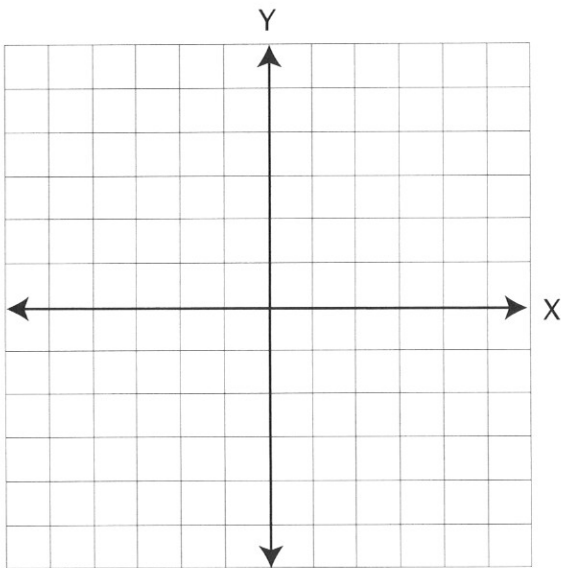14. Simplify: $(R^{-2}S^3)^{-3}$

15. $15^2 =$

16. $\sqrt{16} =$

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

18. Nine coins made up of dimes and nickels have a total value of $.60. How many are there of each coin?

19. Express using the standard form of the equation of a line: $Y = 7X + 3$.

20. Graph: $4Y < 3X - 5$.

Build a rectangle and find the factors.

1. $X^2 + 11X + 28 = ($ $+$ $)($ $+$ $)$

2. $X^2 + 4X + 4 = ($ $+$ $)($ $+$ $)$

3. $X^2 + 6X + 8 = ($ $+$ $)($ $+$ $)$

4. $X^2 + 8X + 16 = ($ $+$ $)($ $+$ $)$

Build a rectangle and find the area (product).

5. $(X + 5)(X + 1) =$ 6. $(X + 3)(X + 3) =$

7. Find the factors: $X^2 + 12X + 32$.   8. Check #7 by multiplying the factors to find the product.

9. Find the factors: $X^2 + 20X + 100$.   10. Check #9 by multiplying the factors to find the product.

Add.

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

12. $2X^2 + 7X + 6$
   $+ 5X^2 - 4X + 10$

13. Simplify: $[(P^5)^3]^{-2}$

14. Simplify: $(S^6 R^{-3} S^2)^0$

15. $11^2 =$

16. $\sqrt{144} =$

17. Find three consecutive odd integers such that fourteen times the second, plus four times the first, equals twelve times the third, minus two.

18. Twenty-seven coins made up of dimes and nickels add up to a total of $1.80. How many are there of each coin?

19. Graph the line $Y = 3/2 X - 1$.

20. Graph a line perpendicular to the line in #19 that passes through (3, -3).