Geometry A25 HW #_____ Name_____
Algebra Review
Factoring by Grouping and Solving Equations by Factoring Date_____

***Copy problems on your paper and show work.***

**Use factoring by grouping to factor completely.**

1. $2xy + 10x - 3y - 15$
2. $3x^3 - 12x^2 + 7x - 28$
3. $20x^4 + 15x^3 + 28x + 21$
4. $8x^3 - 10x^2 - 36x + 45$

**Use factoring to solve each equation for *x*.**

5. $x^2 - 3x - 28 = 0$
6. $2x^2 + 26x + 80 = 0$
7. $x^3 + 5x^2 - 50x = 0$
8. $2x^2 - x = 3$
9. $3x^2 + 10x + 8 = 0$
10. $6x^2 + 13x = 5x$
11. $4x^2 + 56x + 196 = 0$
12. $9x^2 = 48x - 64$
13. $50x^2 - 18 = 0$

Geometry HW #_____ Date_____
Algebra Review A26
Solving Quadratic Equations ***Copy problems on your paper and show work.***

**Use square roots to solve these equations. Give exact answers in simplest form.**

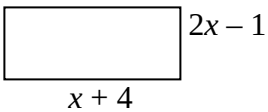
1. $2x^2 = 144$
2. $4x^2 - 5 = x^2 + 31$
3. $\frac{1}{2}x^2 - 5 = 5$
4. $2(x+3)^2 = 8$
5. $(3x+2)^2 - 64 = 0$
6. $5(x-4)^2 = 40$

**Use factoring to solve these equations. Give exact answers in simplest form.**

7. $3x^3 - 48x^2 - 108x = 0$
8. $7x^2 = 9x - 2$
9. $8x^2 + 2x - 15 = 0$
10. $9x^2 - 66x + 121 = 0$
11. $3x^2 - 100 = 332$
12. $x(x-4) = 12$

13. Factor completely:
$24x^3 - 20x^2 - 54x + 45$

14. The area of the rectangle shown is 35 units$^2$.
Write an equation and use it to solve for the base and height.



Geometry HW #_____ Date_____
Quadratic Formula
A27
**Copy all problems on your own paper. Show work.**

***Use the quadratic formula to solve these equations. Give answers in simplest form.***

1. $x^2 + 3x - 5 = 0$
2. $x^2 - 6x + 4 = 0$
3. $2x^2 - 4x - 5 = 0$
4. $10x^2 + 29x = 21$
5. $4x^2 = 8x + 3$
6. $x^2 - 31x + 240 = 0$

***Use square roots to solve these equations. Give answers in simplest form.***

7. $5x^2 - 19 = 2x^2 + 77$
8. $\frac{2}{3}x^2 - 8 = 16$
9. $2(x-4)^2 = 56$
10. $3(2x-5)^2 - 12 = 0$

***Use factoring to solve these equations.***

11. $x^4 - 29x^2 + 100 = 0$
12. $28x^3 + 6x^2 - 4x = 0$

***Write an equation and solve it to find the answers..***

13. The base of a triangle is 4 cm longer than the height. The area is 48 $cm^2$. Find the base and height of the triangle.

Geometry HW #_____
Completing the Square
A28 Date_____
***Copy problems on your own paper. Show work.***

**Find the value of *c* that completes the trinomial square. Factor the trinomial square as the square of a binomial. Example:** $x^2 + 26x + c = x^2 + 26x + 169 = (x + 13)^2$

1. $x^2 - 14x + c$
2. $x^2 + 22x + c$
3. $x^2 + 36x + c$
4. $x^2 - 50x + c$

**Solve each equation by completing the square. Give answers in simplest form.**

5. $x^2 - 2x - 5 = 0$
6. $x^2 + 6x + 1 = 0$
7. $x^2 + 8x - 128 = 0$
8. $x^2 - 12x - 8 = 0$
9. $x^2 - 10x - 96 = 0$
10. $x^2 + 20x + 10 = 0$

**Factor by grouping.** 11. $10x^5 + 45x^4 - 14x - 63$
12. $9x^3 - 54x^2 - 16x + 96$

13. **Solve by quadratic formula.** $3x^2 + 6x + 1 = 0$
14. **Solve for *x*.** $(5x-2)^2 = 64$