FACTORING REVIEW

Turn in extra credit right now!!!

WARM-UP WEDNESDAY

1. $4\sin^2 x - 1 = 0 \quad x \in [0, 2\pi)$ ← radians

$\sqrt{\sin^2 x} = \sqrt{\frac{1}{4}}$

$\sin x = \pm \frac{1}{2}$

$x = \sin^{-1}\left(\pm \frac{1}{2}\right)$

$+ \left| \frac{\pi}{6}, \frac{5\pi}{6} \right.$

$- \left| \frac{7\pi}{6}, \frac{11\pi}{6} \right.$

ABOUT ME:

1. Would you rather be 4'5" or 7'7"?

2. Would you rather live in Antarctica or the Sahara?

Factoring Review

EQ: How do I solve an equation by factoring?

Common Factors

1. $y^2+3y = y(y+3)$

2. $45x+10y = 5(9x+2y)$

3. $5x^2y-4xy+3y = y(5x^2-4x+3)$

FACTORING REVIEW

EQ: How do I solve an equation by factoring?

Difference of Squares

$a^2 - b^2 = (a+b)(a-b)$

1. $x^2 - 64 = (x-8)(x+8)$
   $a=x \quad b=8$

2. $x^2 - y^2 = (x-y)(x+y)$

3. $x^6 - y^6$
   $(x^3)^2 - (y^3)^2 = (x^3-y^3)(x^3+y^3)$

FACTORING REVIEW

EQ: How do I solve an equation by factoring?

Factoring

1. $4x^2 - x - 14$

$a=4$ $b=-1$ $c=-14$

-56: 7×-8, $7 + (-8) = -1$

$4x^2 + 7x - 8x - 14$

$x(4x+7) - 2(4x+7)$

$(4x+7)(x-2)$

① Label a, b, c $ax^2 + bx + c$

② $a \cdot c$, b

③ Split "x" term

④ group first two, last two

⑤ GCF

2. $2a^2 - 5a - 3$

-6: -6×1, $-6 + (-5) = -5$

$(2a^2 - 6a) + (1a - 3)$

$2a(a-3) + 1(a-3) = (a-3)(2a+1)$

FACTORING REVIEW

EQ: How do I solve an equation by factoring?

Zero Product Property

1. $ab = 0$

either a or $b = 0$

2. $x^2 + 6x + 8 = 0$

$a=1$ $b=6$ $c=8$

8 → 4, 2; $4 + 2 = 6$

$(x+4)(x+2) = 0$

$x+4=0$ $x+2=0$

$-4 \quad -4 \quad -2$

$x=-4 \quad x=-2$

$\{-4, -2\}$

FACTORING REVIEW

EQ: How do I solve an equation by factoring?

CLOSING

solve for x

$$3x^2 - 14x - 5 = 0$$