Module 1.3 Multiply Binomials

Directions: Multiply and simplify the following:

Recall $a(b+c) = ab + ac$

1. $(w+4)(w-1)$

$= (w+4)w + (w+4)(-1) = w^2+4w+-w+-4 = w^2+3w-4$

2. $(y-6)(y+2)$

multiplication
each pairing You can multiply w/ one thing from $\{w, 4\}$ and the other from $\{w, -1\}$ added all together

3. $(3y-5)(4y-7)$

4. $(-3b-8)(-2b-3)$

5. $(c-4)(c+4)$

6. $(3+2x)(3-2x)$

7. $(x+6)^2 = (x+6)(x+6)$

8. $(2-7x)^2$

Module 1.3: Factoring

Factor the following

1. $9y+27$ - dist prop ✓ both ways

2. $14-7x$

Note $(x+a)(x+b)$

$= x^2 + (a+b)x + ab$

3. $x^2+9x+20$ ✓ ie, need find a, b s.t.

$a+b=9$ and $a-b=20$

20

1 20 → 21

2 10 → 12

4 5 → 9 ✓

$(x+4)(x+5)$

4. $y^2-10y+16$

5. z^2-z-20

6. $z^2-9z+14$

7. $x^2+18x+81$

8. v^2-64

9. v^2-16

Solving equations by factoring:

A ring w/ this is called an integral domain. No zero divisors (Note if thinking round a 24 hr clock, $2 \cdot 12 = 24 \simeq 0$ hour)

Zero-Product Property:

If $a*b=0$ then $a=0$, $b=0$, or both $a=0$ and $b=0$.

Solve for the given variable.

1. $(w+7)(w-5)=0$

2. $(y-2)(y-8)=0$

3. $y^2+6y+5=0$

4. $x^2+8x+15=0$

5. $y^2-5y-14=0$

6. $x^2+10x+25=0$