Algebra 1

Name_____

12.1 - 12.4 Review

Simplify each sum.

1) $(6p - 3p^4 - 4) + (p - 4p^3 - 6p^4)$

$(-3p^4 - 6p^4) - 4p^3 + (6p + p) - 4$

$- 9p^4 - 4p^3 + 7p - 4$

2) $(2k^2 + 3 - k^3) + (2k^2 + 6 - 6k^3)$

Simplify each difference.

3) $(3n^4 - 3n^3 + 6n) \overset{+}{-} \overset{-5n^3 - 7n^4 + 2n}{(5n^3 + 7n^4 - 2n)}$

$\quad$ Keep change change

$\quad 3n^4 - 3n^3 + 6n$

$+ \underline{\;-7n^4 - 5n^3 + 2n\;}$

$\quad -4n^4 - 8n^3 + 8n$

4) $(x^4 + 4x^3 + 5) - (x^3 - 6 - 3x^2)$

Simplify each expression.

5) $(8 + 2b^4 - 7b) - (6b + 6b^4 - 5)$

6) $(4m^3 - 3m^2 - 6m) + (4m^2 + 6m - 7m^3)$

7) $(6x + 7x^2 - 3x^4) - (7x + 5x^4 - 2x^2)$

8) $(4 - 6n^4 - 2n^2) + (5n^4 - 1 + 8n^2)$

Factor out the GCF for each polynomial.

9) $3v^2 + 27v + 24 = 0$

10) $2r^2 - 2r = 0$ $\quad$ GCF = $2r$

$\quad \dfrac{2r^{2^{\;1}}}{2r} - \dfrac{2r}{2r} = r - 1$

$\quad 2(r-1)$

11) $6x^2 - 30x - 36 = 0$

12) $8n^2 - 24n = 0$

Find each product.

(13) $(7b+2)(b+3)$

14) $(7a+2)(8a+7)$

F   O   I   L

$7b(b) + 7b(3) + 2b + 2(3)$

$7b^2 + 21b + 2b + 6$

$7b^2 + 23b + 6$

Distributive Prop,

$7b(b+3) + 2(b+3)$

$7b^2 + 21b + 2b + 6$

$7b^2 + 23b + 6$

Multiplication Tables

$b + 3$

$7b$	$7b^2$	$+21b$
$+2$	$+2b$	6

$7b^2 + 23b + 6$

15) $(3x+1)(8x+8)$

16) $(6x+2)(8x+1)$

17) $(3m+1)(3m^2+4m-8)$

18) $(5a+4)(2a^2+4a-2)$

Solve each equation by factoring.

19) $k^2+k-2=0$

20) $r^2-10r+16=0$

+ ×

r -8

r	r^2	$-8r$
-2	$-2r$	16

$(r-2)(r-8)$

$r-2=0$ or $r-8=0$

$+2 \ +2$ $+8 \ +8$

$r=2$ $r=8$

21) $r^2-11r+24=0$

22) $n^2-4n=0$

23) $n^2+48=14n$

24) $x^2=-40-13x$