Algebra 1 Review Name Master E ID: 1

Factoring Binomials and Trinomials where a = 1

Date _____ Period ____

Factor each completely.

1) $3n^3 + 21n^2 - 24n$

$-8 \mid 7$
$8 \cdot -1$

$3n(n^2+7n-8)$

$3n(n+8)(n-1)$

2) $4n^2 - 8n - 192$

$-48 \mid -2$
$-8 \cdot 6$

$4(n^2-2n-48)$

$4(n-8)(n+6)$

3) $5x^2 - 10x - 40$

$-8 \mid -2$
$-4 \cdot 2$

$5(x^2-2x-8)$

$5(x-4)(x+2)$

4) $p^3 - 11p^2 + 18p$

$18 \mid -11$
$-9 \cdot -2$

$p(p^2-11p+18)$

$p(p-9)(p-2)$

5) $n^2 + 19n + 90$

$90 \mid 19$
$10 \cdot 9$

$(n+10)(n+9)$

6) $n^2 - 11n + 30$

$30 \mid -11$
$-6 \cdot -5$

$(n-6)(n-5)$

7) $5m^3 - 55m^2 + 90m$

$18 \mid -11$
$-9 \cdot -2$

$5m(m^2-11m+18)$

$5m(m-9)(m-2)$

8) $3p^3 + 30p^2 + 27p$

$3p(p^2+10p+9)$

$3p(p+9)(p+1)$

9) $6n^2 + 6n - 72$

$-12 \mid 1$
$4 \cdot -3$

$6(n^2+n-12)$

$6(n+4)(n-3)$

10) $5b^3 + 35b^2$

$5b^2(b+7)$

11) $x^2 - 10x$

$x(x-10)$

12) $x^4 - 9x^3 + 20x^2$

$x^2(x^2-9x+20)$

$x^2(x-4)(x-5)$

13) $k^3 - 8k^2 + 7k$

$k(k^2-8k+7)$

$k(k-7)(k-1)$

14) $5n^4 - 45n^3 + 40n^2$

$5n^2(n^2-9n+8)$

$5n^2(n-8)(n-1)$

15) $2m^2 + 8m + 6$

$2(m^2+4m+3)$

$2(m+3)(m+1)$

16) $2p^2 + 8p - 24$

$2(p^2+4p-12)$

$2(p+6)(p-2)$

17) $6n^3 + 18n^2 - 324n$

$6n(n^2+3n-54)$

$6n(n+9)(n-6)$

18) $3b^3 - 15b^2 - 72b$

$3b(b^2-5b-24)$

$3b(b-8)(b+3)$

19) $r^2 - 14r + 45$

$(r-9)(r-5)$

20) $x^2 - 6x + 8$

$(x-4)(x-2)$

Review of Algebra 1

Name Master E

Factoring Trinomials where a > 1

Date _____ Period ____

Factor each completely.

1) $10x^3 + 50x^2$

$10x^2(x+5)$

2) $9n^4 + 9n^3$

$9n^3(n+1)$

3) $9x^4 - 82x^3 - 80x^2$

$x^2(9x^2-82x-80)$

$x^2(x-10)(9x+8)$

$-720 \mid -82$

$-72 \cdot 10 \mid -62$

$-90 \cdot 8$

$(x-\frac{90}{9})(x+\frac{8}{9})$

4) $18x^2 + 159x + 120$

$3(6x^2+53x+40)$

$3(x+8)(6x+5)$

$240 \mid 53$

$48 \cdot 5$

$(x+\frac{48}{6})(x+\frac{5}{6})$

5) $9p^2 - 59p - 28$

$(p-7)(9p+4)$

$-252 \mid -59$

$-63 \cdot 4$

$(p-\frac{63}{9})(p+\frac{4}{9})$

6) $8r^2 - 10r - 3$

$(2r-3)(4r+1)$

$-24 \mid -10$

$-12 \cdot 2$

$(x-\frac{12}{8})(x+\frac{2}{8})$

7) $18b^2 + 182b + 20$

$2(9b^2+91b+10)$

$2(b+10)(9b+1)$

$90 \mid 91$

$+90 \quad +1$

$(b+\frac{90}{9})(b+\frac{1}{9})$

8) $40x^2 + 108x + 72$

$4(10x^2+27x+18)$

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

$180 \mid 27$

$15 \cdot 12$

$(x+\frac{15}{10})(x+\frac{12}{10})$

$(x+\frac{3}{2})(x+\frac{6}{5})$

9) $8b^2 + 59b + 21$

$(b+7)(8b+3)$

$168 \mid 59$

$56 \cdot 3$

$(b+\frac{56}{8})(b+\frac{3}{8})$

10) $4k^2 + 31k - 90$

$(k+10)(4k-9)$

$-360 \mid 31$

$40 \cdot -9$

$(k+\frac{40}{4})(k-\frac{9}{4})$

11) $6r^2 - 30r$

$6r(r-5)$

12) $30a^2 - 213a - 216$

$3(10a^2-71a-72)$

$3(10a+9)(a-8)$

$-720 \mid -71$

$9 \cdot -80$

$(a+\frac{9}{10})(a-\frac{80}{10})$

13) $6v^2 - 2v$

$2v(3v-1)$

14) $4m^2 + 27m + 35$

$(4m+7)(m+5)$

$140 \mid 27$

$7 \cdot 20$

$(m+\frac{7}{4})(m+\frac{20}{4})$

15) $9m^2 - 24m - 20$

$(3m+2)(3m-10)$

$-180 \mid -24$

$6 \cdot -30$

$(m+\frac{6}{93})(m-\frac{30}{93})$

16) $9m^2 + 68m - 32$

$(m+8)(9m-4)$

$-288 \mid 68$

$72 \cdot -4$

$(m+\frac{72}{9})(m-\frac{4}{9})$

17) $36x^3 - 356x^2 + 288x$

$4x(9x^2-89x+72)$

$4x(9x-8)(x-9)$

$648 \mid -89$

$-81 \mid -8$

$(x-\frac{8}{9})(x-\frac{81}{9})$

18) $40a^3 + 48a^2$

$8a^2(5a+6)$

19) $36x^2 - 78x + 36$

$2(18x^2-39x+18)$

$2(3x-1)(4x-3)$

$324 \mid -39$

$-12 \cdot -27$

$(x-\frac{12}{36})(x-\frac{27}{36})^3$

20) $8x^3 - 42x^2 - 36x$

$2x(4x^2-21x-18)$

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

$-72 \mid -21$

$-24 \cdot 3$

$(x-\frac{24}{4})(x+\frac{3}{4})$