

Semester 2 Exam Practice – Polynomials and Factoring
(Multiple Choice 15-19) + (One Multi-Part Constructed Response)

C 15. Simplify.

$$(4x^3 - 12x^2 - 5) + (-8x^3 + 10x - 3)$$

- a) $-4x^3 - 2x + 2$
- b) $-4x^3 - 2x - 8$
- c) $-4x^3 - 12x^2 + 10x - 8$
- d) $-4x^3 - 2x^2 - 2x - 8$

B 16. Simplify.

$$(7m^3 - 2m^2 + 4) - (-5m^3 + 2m + 2)$$

- a) $2m^3 - 2m^2 + 2m + 6$
- b) $12m^3 - 2m^2 - 2m + 2$
- c) $12m^3 - 2m^2 + 2m + 6$
- d) $2m^3 - 4m^2 + 2m + 6$

C 17. Simplify.

$$(3g - 2)(g + 4)$$

- a) $4g + 2$
- b) $3g^2 - 8$
- c) $3g^2 + 10g - 8$
- d) $3g^2 + 2g - 8$

B 18. Factor the trinomial.

$$x^2 + 5x - 24$$

- a) $(x + 12)(x - 2)$
- b) $(x + 8)(x - 3)$
- c) $(x - 8)(x + 3)$
- d) $(x - 24)(x + 1)$

D 19. Factor the trinomial.

$$5x^2 + 9x - 18$$

- a) $(x + 15)(x - 6)$
- b) $(x - 3)(5x + 6)$
- c) $(5x + 3)(x - 6)$
- d) $(x + 3)(5x - 6)$

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- Factor each polynomial completely. (Don't forget to factor out a GCF if needed.)

a) $m^2 + m - 20$

$\begin{array}{r} -20 \\ 5 \times -4 \\ 1 \end{array}$ $(m+5)(m-4)$

b) $8x^2 + 10x - 3$

$\begin{array}{r} -24 \\ 12 \times -2 \\ 10 \end{array}$ $(8x^2 - 2x) + (12x - 3)$
 $2x(4x-1) + 3(4x-1)$
 $(4x-1)(2x+3)$

c) $8m^2 - 26m - 70$

$2(4m^2 - 13m - 35)$
 $2((4m^2 - 20m) + (7m - 35))$
 $2(4m(m-5) + 7(m-5))$
 $2(4m+7)(m-5)$

$\begin{array}{r} -140 \\ 7 \times -20 \\ -13 \end{array}$ $\begin{array}{r} 1 \ 140 \\ 2 \ 70 \\ 4 \ 35 \\ 5 \ 28 \\ 7 \ 20 \end{array}$

d) $(12a^3 - 9a^2 + 4a - 3)$

$3a^2(4a-3) + 1(4a-3)$
 $(3a^2+1)(4a-3)$

e) $x^2 - 36$

$(x+6)(x-6)$

$a^2 - b^2$
Diff. of
Squares

- Factor each polynomial completely. (Don't forget to factor out a GCF if needed.)

a) $r^2 + 2r - 8$

$\begin{array}{r} -8 \\ -2 \times 4 \\ 2 \end{array}$ $(r-2)(r+4)$

b) $6x^2 - 23x - 18$

$\begin{array}{r} -108 \\ +4 \times -27 \\ -18 \end{array}$ $(6x^2 + 4x) - (27x + 18)$
 $2x(3x+2) - 9(3x+2)$
 $(3x+2)(2x-9)$

c) $5y^2 + 15y + 10$

$5(y^2 + 3y + 2)$
 $5(y+2)(y+1)$

$\begin{array}{r} 2 \\ +2 \times +1 \\ 3 \end{array}$

d) $(3n^3 - 4n^2 + 9n - 12)$

$n^2(3n-4) + 3(3n-4)$
 $(n^2+3)(3n-4)$

e) $x^2 - 8x + 16$

$(x-4)^2$

$a^2 - 2ab + b^2$
Perfect Square