

Name: _____ Period: _____ Date _____

Key



FoM10 - Chapter 3: Part 2 PRACTICE Test

NO CALCULATOR SECTION

/12 Written Response: SHOW ALL WORK! REMEMBER UNITS!

1. What is the GCF of $12x^3y^2 + 18x^2y^2 + 6x^4y$ (1 mark)

Answer: $6x^2y$

2. Factor. Check by expanding. $x^2 - 6x + 5$ (2 marks)

$(x-5)(x-1)$

two #s that

$\begin{matrix} \times & 5 \\ + & -6 \end{matrix}$

-5 and -1

Answer: $(x-5)(x-1)$

Check:

$(x-5)(x-1)$
 $x^2 - x - 5x + 5$
 $x^2 - 6x + 5 \checkmark$

3. Factor. $2x^2 - 5x - 3$ (2 marks)

$2x^2 - 6x + 1x - 3$

two #s that $\times -6$
 $+ -5$

$2x(x-3) + 1(x-3) \Rightarrow (x-3)(2x+1)$

Answer: $(x-3)(2x+1)$

-6, 1

4. Factor. $9x^2 + 12xy + 4y^2$ (2 marks)

perfect square?

Answer: $(3x+2y)^2$

$(3x+2y)(3x+2y) = (3x+2y)^2$

check by FOIL:

$9x^2 + 6xy + 6xy + 4y^2$

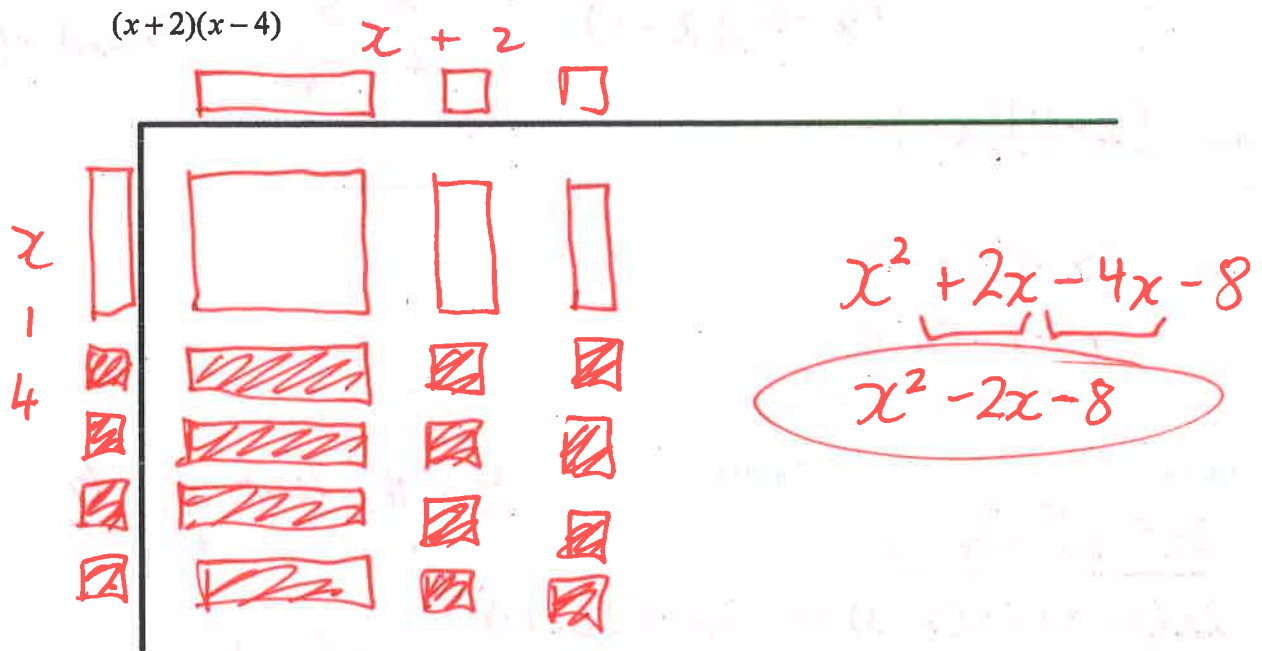
$9x^2 + 12xy + 4y^2 \checkmark$

5. Factor FULLY: $2w^4 - 32$ (3 marks)

$2(w^4 - 16)$ ← difference of squares
 $2(w^2 + 4)(w^2 - 4)$ → $2(w^2 + 4)(w + 2)(w - 2)$
 ↑ another difference of squares

Answer: $2(w^2 + 4)(w + 2)(w - 2)$

6. Model the following binomial product by drawing algebra tiles. Write the final product. (2 marks)



final product: $x^2 - 2x - 8$

Chapter 3: Part 2 PRACTICE Test

Calculator Permitted

/10 Multiple Choice: Choose the BEST answer. Record your answer on the line.

D 1. Simplify the expression $y^2 + 10y - 8 - 11y^2 - 30y - 32$, then factor.

$$-10y^2 - 20y - 40 \Rightarrow -10(y^2 + 2y + 4)$$

- a. $-5(2y^2 + 4y + 1)$
- b. $-5(2y^2 + 4y + 8)$
- c. $-10(y^2 - 2y - 4)$
- d. $-10(y^2 + 2y + 4)$

C 2. Identify the greatest common factor of the terms in the trinomial $12s^3t^4 + 24s^4t^2 - 30s^2t^3$.

- a. $6s^3t^2$
- b. $6s^2t^3$
- c. $6s^2t^2$
- d. $12s^2t^2$

$$6s^2t^2$$

A 3. Factor: $t^2 + 4t - 21$

$$\begin{array}{r} \times -21 \\ + 4 \end{array} \quad 7, -3$$

$$(t+7)(t-3)$$

- a. $(t+7)(t-3)$
- b. $(t+1)(t-21)$
- c. $(t-7)(t+3)$
- d. $(t-1)(t+21)$

C 4. Factor: $2b^2 + 18b - 20$

$$2(b^2 + 9b - 10) \Rightarrow 2(b+10)(b-1)$$

- a. $2(b+2)(b-5)$
- b. $2(b-2)(b+5)$
- c. $2(b-1)(b+10)$
- d. $2(b+1)(b-10)$

D 5. Factor: $7n^2 + 62n - 9$

$$\begin{array}{r} \times -63 \\ + 62 \end{array} \quad \text{decomp.}$$

$$63, -1$$

$$\underline{7n^2 + 63n} - \underline{1n - 9}$$

- a. $(7n-9)(n+1)$
- b. $(7n+9)(n-1)$
- c. $(7n+1)(n-9)$
- d. $(7n-1)(n+9)$

$$7n(n+9) - 1(n+9)$$

$$(n+9)(7n-1)$$

A 6. Factor: $9a^2 + 48a + 64$

perfect square?
 $(3a+8)(3a+8)$ Check: $(3a+8)(3a+8)$
 $9a^2 + 24a + 24a + 64$
 $9a^2 + 48a + 64$ ✓

- a. $(3a+8)^2$
- b. $(9a+8)(a+8)$
- c. $(3a-8)^2$
- d. $(3a+8)(3a-8)$

B 7. Factor: $16p^2 - 81q^2$ *diff of sq.*
 $(4p+9q)(4p-9q)$

- a. $(4p-9q)^2$
- b. $(4p+9q)(4p-9q)$
- c. $(4p+9q)^2$
- d. $(16p-9q)(p-9q)$

C 8. Identify this polynomial as a perfect square trinomial, a difference of squares, or neither.
 $25g^2 - 9h^2$ *neither*

- a. Perfect square trinomial
- b. Difference of squares
- c. Neither

for diff of squares it would have to be $25g^2 - 9h^2$

A 9. Which set of algebra tiles represents $3x^2 + x + 4$?

a. $3x^2$ x 4 ✓

c. $2x^2$ x

b. $3x^2$ x 2 ✗

d. $3x^2$ $4x$ ✗

B 10. How MANY factors will this expression have when it is FULLY factored? $x^4 - x^2 - 12$

- a. four
- b. three
- c. five
- d. two

2 numbers that:
 $x - 12$
 $+ -1$
 $-4, 3$
 $(x^2-4)(x^2+3)$
 $(x-2)(x+2)(x^2+3)$
 ↑ ↑ ↑
 one two three