

Last Name: _____
First Name: _____

Date: _____
Grade 9
Term 2 Practice Test 4

Factoring

1) Factor the following.

a) $3m - 12$	b) $16x^2 + 2x$
c) $6bc - 18ab^2c^3$	d) $4seccareccia - 2stuckey$
e) $fh - 4f^2hy$	f) $6rajakumar + 2parker$
g) $9cde - 33e$	h) $39rst + 13rt$
i) $5x^2y^3 - xy^3z^4$	j) $4fu^2 - 2fu^4$
k) $3az^4 + 6az$	l) $99 - 9c^2$
m) $7gh + 28h^2$	n) $3x^5 - 6x^7 + 9z$
o) $8a^4 - 4a^3 + 12a$	p) $dfz^4 - 6fz^5$
q) $47y^2 + 18y^5 + 37y$	r) $wz^4 - wz$

2) Write the following in decimal notation.

a) $7.58 \times 10^6 =$ _____	b) $0.000035 \times 10^3 =$ _____
c) $5.24 \times 10^{-1} =$ _____	d) $0.2 \times 10^{-4} =$ _____
e) $6.19 \times 10^{-3} =$ _____	f) $0.0538 \times 10^7 =$ _____

- 3) Simplify. Write each answer in scientific notation. Round to three decimal places if needed.

a) $(9.7 \times 10^5)(3.9 \times 10^{-8})$	b) $(7.88 \times 10^5)(4.9 \times 10^{-4})$
c) $\frac{(9.6 \times 10^{-4})}{(3 \times 10^6)}$	d) $\frac{(14 \times 10^6)}{(7 \times 10^{-4})}$

- 4) Convert the following.

a)	$27.3m = \underline{\hspace{2cm}} \text{ hm}$
b)	$800cm^2 = \underline{\hspace{2cm}} \text{ dm}^2$
c)	$4\,000\,000cm^3 = \underline{\hspace{2cm}} \text{ L}$
d)	$638L = \underline{\hspace{2cm}} \text{ cm}^3$
e)	$13\,250dm^3 = \underline{\hspace{2cm}} \text{ mL}$
f)	$12hm^3 = \underline{\hspace{2cm}} \text{ L}$

- 5) Determine if the following statements are **true** or **false**. The entire word must be written.

a. $\mathbb{N} \subseteq \mathbb{Z}$	b. $768 \in \mathbb{Z}$
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- 6) TRUE or FALSE. All of the following are irrational numbers. $-78, \sqrt{169}, 18$

Answer: _____

- 7) Complete the following chart.

Inequality	Number line	Bracket Notation

8) Solve for the unknown variables (no decimals).

a) $3(-2x) - 7 = -5(4x) - 9$	b) $-5(2x^2) + 35 = -13 - 2x^2$
Answer: _____	Answer: _____
c) $3x - 4 + 12 = 13x + 7(2x)$	d) $-8(-5x) = 13x + 3x + 72$
Answer: _____	Answer: _____

9) Write the following as a power of 10.

a) $10\,000 =$ _____ b) $0.000\,001 =$ _____

10) State if the following polynomial expressions are monomials, binomials or trinomials.

$5x^2y^3 + 9x^2y^{-3} + 12x^2y^3$ Answer: _____

11) Write the following in exponential form and in standard form.

$\sqrt[3]{64} =$ _____ $=$ _____

12) Simplify the following expressions so they only have positive exponents.

a) $(7x^2y^{-3})^{-2} =$	b) $\frac{169x^{-8}y^{-7}}{13x^{-5}} =$
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13) Determine the degree of the following polynomial expressions.

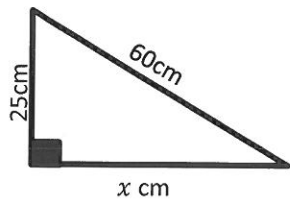
$$(2x^3)^7 + 3(5x^2) \quad \text{Answer: degree} = \underline{\hspace{2cm}}$$

14) Simplify the following algebraic expressions. If the equation is already in simplified form rewrite the statement in the space provided.

a)	$(2x - 3)(5x + 3)$	b)	$(-2x^6 + 8x^4) \div 2x$
c)	$(15x^3 - 5x) - (3x^2 - x)$	d)	$18x^2 + 6x^2 - 8 + 4$
e)	$(4x^3 - 5)^2$	f)	$(6x^3 - 3x) - (2x^2 - x)$

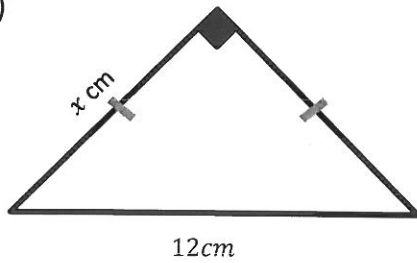
15) Determine the length of the missing side. Images are not drawn to scale.

a)



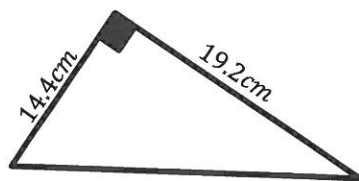
Answer: _____

b)



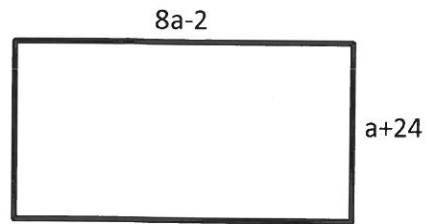
Answer: _____

c)



Answer: _____

- 16) The perimeter of the rectangle is 260cm. The algebraic expression for the length is $8a-1$. The algebraic expression for the width is $a+24$. What is the value of the length and width of the rectangle?



- 17) Consider the polynomials:

$$A = -x^2 - 6x + 7$$

$$B = x^2 - 8$$

$$C = -2x - 5$$

Find.

$$4(A+C) - 2(B)$$

Answer: _____