SOL Lesson 1 Quiz Name _____

Simp Mono.Polynomials, Radicals, and Factoring Date __

1. Which is a simplified form of the following expression?

$(xy^3)(xy)^4$

A x^2y^7

B x^4y^{12}

C x^5y^7

D x^5y^{12}

2 The expression $4\sqrt{7}$, is the simplest radical form of

A $\sqrt{28}$

B $\sqrt{112}$

C $\sqrt{196}$

D $\sqrt{784}$

3. When completely factored, $4x^2 - 36$ equals –

A $(4x-9)(x+4)$

B $4(x-3)(x+3)$

C $4(x^2+9)$

D $4(x^2-36)$

4 In simplest radical form, $\sqrt{32}$ is equal to—

A $2\sqrt{4}$

B $2\sqrt{16}$

C $4\sqrt{2}$

D $8\sqrt{2}$

5. What is the greatest common monomial factor of

$4y^3 + 8xy + 12y^2 + 16x^2y^2$

A $12x^2y^3$

B $4x^2y^3$

C 4

D $4y$

6. Which binomial is a factor of the following expression?

$3x^2 - 10x - 8$

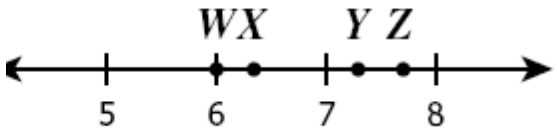
F $(3x-4)$

G $(3x-1)$

H $(3x+8)$

J $(3x+2)$

7. Which labeled point is closest to $\sqrt{51}$?



A W **B** X **C** Y **D** Z

8. Which equation is NOT equivalent to the following expression?

3 x 3 x 3 x 3 x 3 x 3

A $3^3 \cdot 3^2$

B $3^1 \cdot 3^5$

C 9^3

D 27^2

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9. If $x \neq 0$, what is the quotient when the following division is performed?

$2x\overline{)6x^3+4x^2+2x}$

10. Simplify the following expression?

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

11. What is the following product?

$(2pq^2r^3)(5q^3r^4s)$

12. Given $x > 0$, $y > 0$, and $z > 0$. In simplest radical form, $\sqrt{32x^2yz^3}$ is equal to –

13. Which expression is equivalent to

$(4x^2-3x+9)+(7x^2-11)+(-x^2+7x-2)$

14. Which is a factored form of the following expression?

$2x^2-6x$

15. Check each expression that simplifies to $\frac{6a^5}{b^7}$. You must select all correct expressions.

- ☐ $\left(\frac{a^2}{2b^4}\right)^3$
- ☐ $\frac{6b^{-7}}{a^{-5}}$
- ☐ $\frac{2a^3c^0}{12a^2b^7}$
- ☐ $\frac{18a^{10}b^4}{3a^5b^{11}}$
- ☐ $\left(\frac{2a^3}{b^6c^2}\right)\cdot\left(\frac{3a^7c^2}{ba^3}\right)$

16 **When completely factored,**

$x^2 - 7x + 10$ equals —

17 **What are factors of $2x^2 + 9x + 9$?**

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18. Which is a factor of $a^2 - 81$ **F** $a+3$ **G** $a+9$ **H** $a+27$ **J** $a+81$	

Simplify each expression

19. $\frac{24x^{-3}y^5}{6x^2y^{-9}}$

20. $\left(\frac{x^6y^{-2}}{x^{-3}y^{-7}}\right)^{-1}$

21. $(2x^{-5})^3(3x^{-6})$

22. $(3x^2 + 12x - 15) \div (x + 5)$

23. $\sqrt{24x^{12}y^{15}}$

24. $\sqrt{180x^8}$

25. $\sqrt[3]{24}$

26. $\sqrt[3]{2{,}744}$