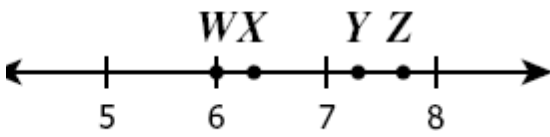1. Which is a simplified form of the following expression?

$$(xy^3)(x^2y)^4$$

A x^2y^8
B x^9y^6
C x^7y^6
D x^3y^8

2.   **The expression**

$$5\sqrt{7}$$

is the simplest radical form of —

F $\sqrt{1,225}$

G $\sqrt{245}$

H $\sqrt{175}$

J $\sqrt{35}$

3. What is the complete factorization of $x^2 - 5x - 14$

F $(x-2)(x+7)$
G $(x+2)(x-7)$
H $(x-1)(x+14)$
J $(x+1)(x-14)$

4.   **What is $\sqrt{108}$ written in simplest radical form?**

F $2\sqrt{27}$
G $3\sqrt{12}$
H $6\sqrt{3}$
J $18\sqrt{3}$

5. What is the greatest common monomial factor of

$$3x^3 + 6xy + 9x^2 + 12x^2y^2?$$

A x^3y^2
B $3x^2y^2$
C $3x$
D 3

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

$$2x^2 + x - 1$$

A $x-1$
B $2x+2$
C $2x-1$
D $2x+1$

7. Which labeled point is closest to $\sqrt{40}$?

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 x 3

A $3^3 \cdot 3^2$
B $3^1 \cdot 3^5$
C 9^3
D 27^2

9. Which is equivalent to the following expression?

$$3a(2a+b)$$

10. Which expression is equivalent to the following expression?

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

11. If $x \neq 0$, what is the quotient when the following division is performed? $2x \overline{) 6x^3 + 4x^2 + 2x}$	12. Simplify the following expression? $(3x+1)(4x-1)$
13. What is the following product? $\left(2pq^2r^3\right)\left(5q^3r^4s\right)$	14. **Given $x > 0$, $y > 0$, and $z > 0$. In simplest radical form, $\sqrt{32x^2 yz^3}$ is equal to –**

15. Which expression is equivalent to $(4x^2 - 3x + 9) + (7x^2 - 11) + (^-x^2 + 7x - 2)$	16. Which is a factored form of the following expression? $2x^2 - 6x$

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

☐ $\left(\dfrac{a^2}{2b^4}\right)^3$ ☐ $\dfrac{18a^{10}b^4}{3a^5b^{11}}$

☐ $\dfrac{6b^{-7}}{a^{-5}}$ ☐ $\left(\dfrac{2a^3}{b^6c^2}\right)\cdot\left(\dfrac{3a^7c^2}{ba^3}\right)$

☐ $\dfrac{2a^3c^0}{12a^2b^7}$

18 When completely factored, $x^2 - 7x + 10$ equals —	19 What are factors of $2x^2 + 9x + 9$?

20. Which is a factor of $a^2 - 81$

   F $a+3$

   G $a+9$

   H $a+27$

   J $a+81$

Simplify each expression

21. $\dfrac{15x^{-5}y^7}{3x^2y^{-8}}$

22. $\left(\dfrac{x^3y^4}{x^{-2}y^{-4}}\right)^{-1}$

23. $(2x^{-3})^2(4x^{-4})$

24. $(2x^2 - 6x - 8) \div (x - 4)$

25. $\sqrt{16x^{10}y^{17}}$

26. $\sqrt{432x^6}$

27. $\sqrt[3]{16}$

28. $\sqrt[3]{3,375}$