

Name: _____ Period: _____ Date: _____

P1-P5 Practice Test 1 2017

Non-Calculator

Directions: Show all work to receive credit. If a question is given in radical form, answer in radical form. If a question is given in exponent form, answer in exponent form. Please put final answers on the provided line.

1. Simplify

$$\frac{(4yx^{2n})^2}{2^{-1}x^ny} = \frac{16y^2x^{4n}}{2^{-1}x^ny} = 32x^{3n}y$$

2. Simplify

$$\sqrt[3]{\sqrt{64x^8y^5}} = \sqrt[6]{64x^8y^5} = 2|x|\sqrt[6]{x^2y^5}$$

3. Expand and put in standard form.

$$(4x^2+3)(4x^2-3) = 16x^4-9$$

4. Factor

$$(x-1)^2-64 = (x-1-8)(x-1+8) \\ (x-9)(x+7)$$

5. Factor

$$4x(x-5)^2 + 6x^2(x-5) = 2x(x-5)(2(x-5) + 3x)$$

$2x-10+3x$
 $5x-10$

$$10x(x-5)(x-2)$$

6. Expand and simplify.

$$(\sqrt{5} + 2\sqrt{10})^2$$

$$5 + 2 \cdot 2\sqrt{50} + 40$$
$$45 + 20\sqrt{2}$$

7. Evaluate $|x^2 + 2|$.

$$x^2 + 2, x \in \mathbb{R}$$

8. Perform the operation and simplify.

$$\frac{7}{3x^2 - 6x} + \frac{x^2}{x^2 - 4x + 4} = \frac{7(x-2)}{3x(x-2)^2} + \frac{x^2 \cdot 3x}{(x-2)(x-2) \cdot 3x}$$

$$7x - 14 + 3x^3$$

$$\frac{\cancel{x^2} + 7x - 14}{3x^3 + 7x - 14}$$

$$\frac{3x^3 + 7x - 14}{3x(x-2)^2}$$

9. Rationalize the denominator.

$$\frac{3\sqrt[4]{3}}{\sqrt[4]{18c^3}}$$

$$\frac{3}{\sqrt[4]{6c^3} \cdot \sqrt[4]{2 \cdot 3^3 c}}$$

$$= \frac{3\sqrt[4]{216c}}{2|c|}$$

$$\frac{\sqrt[4]{216c}}{2|c|}$$

10. Find the domain.

$$\frac{x-2}{x^2-5x+6}$$

$$= \frac{x-2}{(x-2)(x-3)}$$

$$x \neq 2, 3$$

11. Factor

$$5ab - 20b - 7a + 28$$

$$5b(a-4) - 7(a-4)$$

$$(5b-7)(a-4)$$

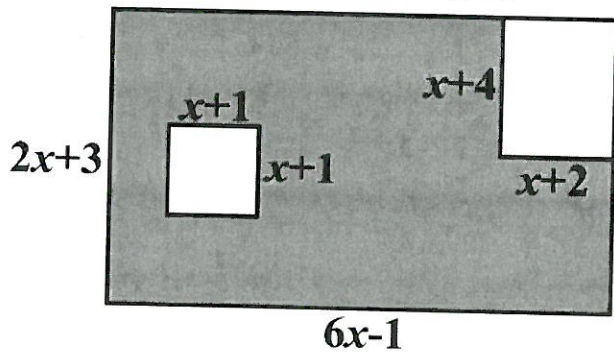
12. Factor

$$4x^{10} - 9 = (2x^5 - 3)(2x^5 + 3)$$

13. Expand
 $(x^3 + 3y)^3$

$$x^9 + 9x^6y + 27x^3y^2 + 27y^3$$

14. Find the area of the shaded region.



$$\begin{aligned}(2x+3)(6x-1) &= 12x^2 + 16x - 3 \\ &\quad - (x^2 + 2x + 1) \\ &\quad - (x^2 + 6x + 8) \\ \hline &= 10x^2 + 8x - 12\end{aligned}$$

15. Simplify

$$9b\sqrt{8b} - 3\sqrt{2b^3}$$

$$18b\sqrt{2b} - 3b\sqrt{2b} = 15b\sqrt{2b}$$

16. The function $C(x) = 1480 + 6x$ represents the cost C for selling x T-shirts. What is the domain of this function?

$$x \geq 0$$