

TIME LIMIT: 15 MINUTES

1. Factor completely:  $x^3 - 4xy^2$

2. Simplify and write as a single fraction:  $3 + 2x^{-1}$

3. Factor completely:  $3y^4 - 48$ .

4. Find the exact solutions for  $x$ :  $6x = 8x^2$

5. Factor completely:  $6yz - 3y - 10z + 5$

6. Find exact solutions of  $2x^4 - 12x^2 + 16 = 0$ .

7. Simplify and write as a regular fraction:  $\frac{\frac{2}{x} + \frac{1}{y}}{\frac{1}{2x} - \frac{1}{y}}$

8. **Simplify and write as a single fraction:**  $\sqrt{p} + \frac{1}{2\sqrt{p}}$

9. Rationalize the denominator and simplify:  $\frac{1 + \sqrt{3}}{1 - \sqrt{3}}$

10. Simplify completely:  $\frac{2 + \sqrt{12}}{2}$

## Answers – PR 2

1.  $x(x - 2y)(x + 2y)$

2.  $\frac{3x + 2}{x}$

3.  $3(y - 2)(y + 2)(y^2 + 4)$

4.  $0, \frac{3}{4}$

5.  $(3y - 5)(2z - 1)$

6.  $\pm\sqrt{2}, \pm 2$

7.  $\frac{4y + 2x}{y - 2x}$

8.  $\frac{2p + 1}{2\sqrt{p}}$

9.  $-2 - \sqrt{3}$

10.  $1 + \sqrt{3}$