

1. Simplify:  $\frac{(3a^2b^{-2})^{-2}}{3(ab)^{-1}}$ .

$$\frac{9a^4b^4}{3ab} : \text{sure}$$

2. Simplify:  $\frac{x^3 - x}{x^2 + x}$ .

$$1 - x : \text{sure}$$

3. Simplify:  $\frac{ax^2 + bx}{a + b} \frac{a^2 - b^2}{ax + b}$ .

$$(q - v)x : \text{sure}$$

4. Simplify:  $\frac{3x^2 - 27x + 60}{x - 4}$ .

$$(g - x)g : \text{sure}$$

5. Simplify:  $\left(\frac{x-2}{x+2}\right) \left(\frac{x^2-4}{x^2-4x+4}\right)$ .

$$1 : \text{sure}$$

6. Expand and simplify:  $\frac{4}{3}(a - b) - \frac{3}{2}(a + b)$ .

$$9/(qL1 + v) - : \text{sure}$$

7. Expand and simplify:  $(x^2 + a)^2 - a^2$ .

$$z^2xvz + \frac{1}{4}x : \text{sure}$$

8. Expand and simplify:  $(x^m + 1)(x^n - 1) - (x^{m+n} - 1)$ .

$$ux - ux : \text{sure}$$

9. Factor completely:  $a^4 - 81b^2$ .

$$(q6 + z^v)(q6 - z^v) : \text{sure}$$

10. Factor completely:  $x^2 - 18x + 81$ .

$$z(6 - x) : \text{sure}$$

11. Factor completely:  $3(x + h)^4 - 48(x + h)^2$ .

$$(\frac{1}{2} + y + x)(\frac{1}{2} - y + x)z(y + x)g : \text{sure}$$

12. Factor completely:  $t^2 - 13t + 36$ .

$$(6 - t)(t - 6) : \text{sure}$$

13. Solve for  $w$ :  $\frac{9-w}{7} - w = \frac{w}{3} + 5$ .

$$\boxed{w = -\frac{18}{11}}$$

14. Solve for  $z$ :  $3z^2 - 7z + 4 = 0$ .

$$\boxed{z = \frac{7 \pm \sqrt{1}}{6}}$$

15. Solve for  $p$ :  $p^2 + p = 11$ .

$$\boxed{p = \frac{-1 \pm \sqrt{49}}{2}}$$

16. Solve for  $q$ :  $q^2 + q + 11 = 0$ .

$$\boxed{\text{ans: no real roots}}$$

17. Text: Chapter 1 Review Exercises on p.47: numbers 53, 55, 63, 65