

Work on separate paper, show all your work to support your answers.

Practice Exercises

15–20. Algebra review Simplify or evaluate the following expressions without a calculator.

15. $(1/8)^{-2/3}$

16. $\sqrt[3]{-125} + \sqrt{1/25}$

17. $(u + v)^2 - (u - v)^2$

18. $\frac{(a + h)^2 - a^2}{h}$

19. $\frac{1}{x + h} - \frac{1}{x}$

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

21–26. Algebra review

21. Factor $y^2 - y^{-2}$.

22. Solve $x^3 - 9x = 0$.

23. Solve $u^4 - 11u^2 + 18 = 0$.

24. Solve $4^x - 6(2^x) = -8$.

25. Simplify $\frac{(x + h)^3 - x^3}{h}$, for $h \neq 0$.

26. Rewrite $\frac{\sqrt{x + h} - \sqrt{x}}{h}$, where $h \neq 0$, without square roots in the numerator.

27–30. Solving inequalities Solve the following inequalities and draw the solution on a number line.

27. $x^2 - 6x + 5 < 0$

28. $\frac{x + 1}{x + 2} < 6$

29. $\frac{x^2 - 9x + 20}{x - 6} \leq 0$

30. $x\sqrt{x - 1} > 0$

37–40. Working with linear equations Find an equation of the line ℓ that satisfies the given condition. Then draw the graph of ℓ .

37. ℓ has slope $5/3$ and y -intercept $(0, 4)$.

38. ℓ has undefined slope and passes through $(0, 5)$.

39. ℓ has y -intercept $(0, -4)$ and x -intercept $(5, 0)$.

40. ℓ is parallel to the x -axis and passes through the point $(2, 3)$.