

1. We started this chapter by looking at exponents that weren't nice positive whole numbers!

- (a) 4^{-1} _____ (b) $10 \cdot 5^{-2}$ _____ (c) $\frac{5}{3^{-1}}$ _____ (d) $\left(\frac{2}{3}\right)^{-2}$ _____ (e) 3^0 _____

2. We pretty quickly moved to algebra and reviewed laws of exponents.

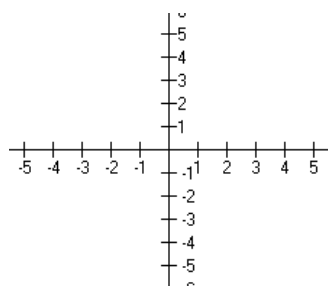
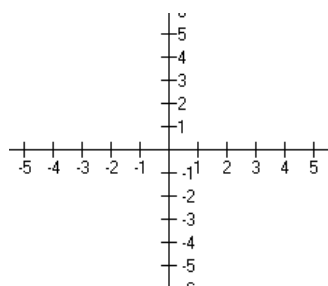
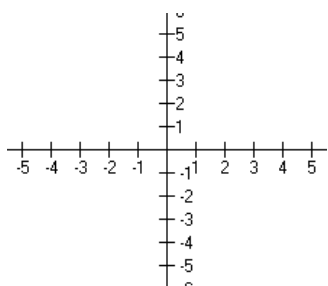
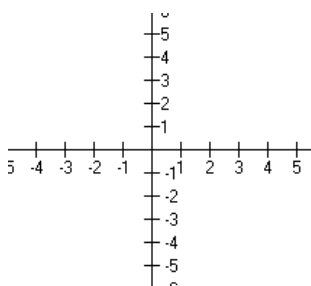
- (a) $x^3 \cdot x^{-1}$ _____ (b) $x^{-3} \cdot x^1$ _____ (c) $2y^{-1}x$ _____ (d) $(2y)^{-1}x$ _____ (e) $(y^{-2})^4$ _____
- (f) $(3y^{-2}x^3)^4$ _____ (g) $\frac{y^{317}}{y^{315}}$ _____ (h) $\frac{x^{-3}}{x^{-7}}$ _____ (i) $\frac{x^2y^{2007}}{x^5y^{2001}}$ _____ (j) $\left(\frac{x^5}{y^2}\right)^{-3}$ _____

3. We soon moved on to looking at fraction exponents

- (a) $9^{\frac{1}{2}}$ _____ (b) $9^{\frac{3}{2}}$ _____ (c) $(27v^{21})^{\frac{1}{3}}$ _____ (d) $(81x^{-8})^{\frac{1}{4}}$ _____

4. We next looked at graphs of x to all various exponents.

- (a) $f(x) = (x-2)^4$ (b) $f(x) = -(x+3)^{\frac{1}{2}}$ (c) $f(x) = x^{\frac{1}{3}} + 2$ (d) $f(x) = -x^{\frac{1}{3}}$



5. When trying to find intercepts for these crazy graphs we stumbled upon radical and exponential equation

Important Notes: • If you even root both sides of an equation, don't forget a plus/minus
• If you even power both sides of an equation to solve it, check your answers!

(a) $\frac{1}{3}(x+2)^4 = 27$

(b) $3(x+7)^3 + 19 = 43$

(c) $\sqrt[3]{4x-20} + 5 = 3$

(d) $\sqrt{x-5} + 7 = x$

6. Some involved multiple steps.

(a) $\sqrt[3]{x^2} = 9$

(b) $\left(\sqrt[5]{x-3}\right)^3 + 12 = 4$
