Equation Challenge – Record yourself typing the following document.

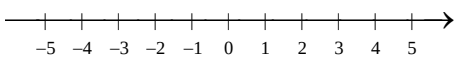
1. Evaluate $(a+3b)^2 \div (-ab)$ when $a=3$ and $b=-2$.

2. Simplify: $\dfrac{x^2+2x-8}{x^2+6x+8} \div \dfrac{x^2-5x+6}{5x+10}$

3. Simplify: $\dfrac{\dfrac{5}{3x-2}-10}{\dfrac{4}{3x-2}+4}$

4. Solve $V=\pi r(r+h)$ for h.

5. Graph the solution for $x+1<5$.



6. Solve:
$$\begin{aligned} 2x-y+3z &= 9 \\ -x+2y+2z &= 9 \\ x+y+z &= 6 \end{aligned}$$

7. Simplify: $\sqrt[5]{32x^8y^{10}}$

8. Simplify: $\sqrt{81x^3}-3x\sqrt{16x}$

9. Simplify: $\left(2^{-3}x^2y^{-1}\right)\left(2^{-1}xy^2\right)^{-2}$

10. Solve for x: $\log_6 x+\log_6(x+1)=1$

11. Write $\sin^2 x-\cos^2 x$ using only cosines.

12. Given $f(x)=\dfrac{2x^2}{x-2}$, evaluate $f(-2)$.

13. Let $f(x)=(2x-1)^3$, find $f'(x)$.

14. Integrate: $\displaystyle\int_{\pi/4}^{\pi} \frac{\sin x\,dx}{\cos x}$

15. Find $\displaystyle\sum_{n=1}^{5} \frac{2^n}{n!}$