Write as a fraction. Rationalize the denominator by multiplying the numerator and denominator by the denominator's complex conjugate.

$$\frac{3+2i}{1-2i}\cdot\frac{1+2i}{1+2i}=\frac{3+6i+2i+4i^2}{1-4i^2}=\frac{3+8i+4(-1)}{1-4(-1)}$$

$$=\frac{3+8i+(-4)}{1+4}=\frac{-1+8i}{5}=\frac{-1}{5}+\frac{8}{5}i$$