

Joneselisi @ CGRA math assignments

$$1. \begin{bmatrix} 9 \\ 0 \\ 9 \end{bmatrix}$$

$$2. \begin{bmatrix} 10 \\ -2 \\ 7 \end{bmatrix}$$

$$3. \begin{bmatrix} 3 \\ 12 \\ 24 \end{bmatrix}$$

$$4. \begin{bmatrix} -16 \\ 8 \\ -2 \end{bmatrix}$$

$$5. \begin{pmatrix} -7 \\ 8 \\ 7 \end{pmatrix}$$

$$6. 9$$

$$7. 9$$

$$8. 0$$

$$9. 22$$

$$10. 90^\circ \text{ or } \frac{\pi}{2} \text{ rad}$$

$$11. 26.08454 \dots$$

$$12. \begin{pmatrix} 44 \\ 25 \\ 0.33 \end{pmatrix}$$

$$13. e = (1-0.8) \begin{pmatrix} 2 \\ -2 \\ 1 \end{pmatrix} + 0.8 \begin{pmatrix} 8 \\ 8 \\ 6 \end{pmatrix} = \begin{bmatrix} 6.8 \\ -0.4 \\ 5 \end{bmatrix}$$

$$14. \begin{pmatrix} -20 \\ -52 \\ 76 \end{pmatrix}$$

$$15. \begin{pmatrix} -4 \\ -8 \\ 1 \end{pmatrix}$$

$$16. \begin{pmatrix} 3 & 10 & 0 \\ -5 & 7 & 0 \\ -1 & 0 & 3 \end{pmatrix}$$

$$17. \begin{pmatrix} 0 & 20 & 0 \\ -15 & -13 & 0 \\ -3 & -5 & 2 \end{pmatrix}$$

$$18. \begin{pmatrix} 3 & 5 & 16 \\ 0 & 4 & 8 \\ 0 & 0 & 1 \end{pmatrix}$$

19. Translation

$$20. \begin{bmatrix} \cos 60 & -\sin 60 & 0 \\ \sin 60 & \cos 60 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$