

Partial solutions for 2 3 4 5 7 10 13 17 23 29 32

2. $\mathbf{i} - 8\mathbf{j} - 10\mathbf{k}$

3. $14\mathbf{i} + 4\mathbf{j} + 2\mathbf{k}$

4. $\langle -18, -18 \rangle$

5. $-\frac{3}{2}\mathbf{i} + \frac{7}{4}\mathbf{j} + \frac{2}{3}\mathbf{k}$

7. $(1 - t)\mathbf{i} + (t^3 - t^2)\mathbf{k}$

10. $2\mathbf{i} + \mathbf{j}$

13. (a) Meaningful. Scalar

(b) Meaningless

(c) Meaningful. Another vector

(d) Meaningless

(e) Meaningless

(f) Meaningful. Scalar

17. $a \times b = \langle -7, 10, 8 \rangle$, $b \times a = \langle 7, -10, -8 \rangle$

23. Let $a = \langle a_1, a_2, a_3 \rangle$, $b = \langle b_1, b_2, b_3 \rangle$. Evaluate cross product and factor out -1 .

29. $\vec{PQ} \times \vec{PR} = \langle 0, 18, -9 \rangle$. Area = $\frac{1}{2}|\langle 0, 18, -9 \rangle| = \frac{9}{2}\sqrt{5}$.

32. Area is $\frac{1}{2}\sqrt{699}$