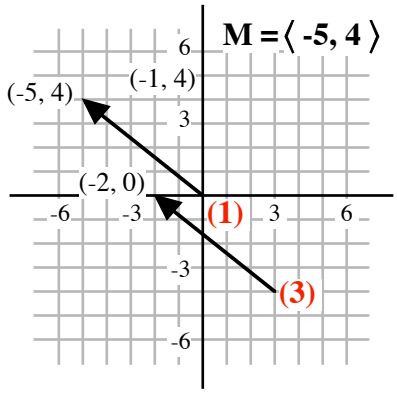
Chapter 8, Vectors and Vector Angles (Sec. 8.1-8.2)

ODD Focus Exercise Answers

Sec. 8.1 Introduction to Vectors

#1 & 3:



5. $|\mathbf{P}| = 10$ **7.** $|\mathbf{S}| = 5\sqrt{5}$

9. $\mathbf{J} = \langle 24, -18 \rangle$ **11.** $\mathbf{L} = \langle -8, 6 \rangle$

For #13-19, odd, the graphs of the solutions are not yet ready.

13. $\mathbf{R} = \langle 7, 4 \rangle$ **15.** $\mathbf{R} = \langle 4, 3 \rangle$

17. $\mathbf{R} = \langle 4, 0 \rangle$ **19.** $\mathbf{R} = \langle -1, -8 \rangle$

21. $\mathbf{A} = \langle 0, 42 \rangle$ **23.** $\mathbf{C} = \langle 14, -16 \rangle$ **25.** $\mathbf{W} = -9\mathbf{i} + 2\mathbf{j}$ **27.** $\mathbf{Y} = 9\mathbf{i} + 14\mathbf{j}$

Sec. 8.2 Vector Angles

Note: Your answers might vary a little due to rounding errors.

1. $\langle 19.5, 10.2 \rangle$ **3.** $\langle -8.4, 43.2 \rangle$ **5.** $\langle -9.2, -3.9 \rangle$ **7.** $\langle 14.5, -54.1 \rangle$

Oops! It appears as though there is no #9-12, but I accidentally put #13-16 twice. Yikes! The first set of #13-16 is to be renumbered #9-12. **Sorry for the confusion**.

9. $\theta = 54.5°$ $(\hat{\theta} = 54.5°)$

11. $\theta = 260.5°$ $(\hat{\theta} = 80.5°)$

13. $\theta = 157.4°$ $(\hat{\theta} = 22.6°)$

15. $\theta = 292.6°$ $(\hat{\theta} = 67.4°)$

17. $\mathbf{G} \bullet \mathbf{H} = 36$

19. $\mathbf{A} \bullet \mathbf{B} = 0$

21. $|\mathbf{M}| = \sqrt{40}$
$|\mathbf{N}| = \sqrt{26}$
$\mathbf{M} \bullet \mathbf{N} = 16$
$a = 60.256°$
$\boxed{a \approx 60.3°}$

23. $|\mathbf{S}| = \sqrt{41}$
$|\mathbf{T}| = \sqrt{10}$
$\mathbf{S} \bullet \mathbf{T} = -11$
$a = 122.905°$
$\boxed{a \approx 123.0°}$

25. $|\mathbf{E}| = \sqrt{68}$
$|\mathbf{F}| = \sqrt{612}$
$\mathbf{E} \bullet \mathbf{F} = 204$
$\boxed{a = 0°}$

27. $|\mathbf{X}| = \sqrt{45}$
$|\mathbf{Y}| = \sqrt{80}$
$\mathbf{X} \bullet \mathbf{Y} = 0$
$\boxed{a = 90°}$