

Chapter 5 Test Review Answers

1. $-\frac{5}{13}$

2. 1

3. $\sec^2 x$

4. 1

5. $\cos x$

6. $\frac{\sqrt{6} + \sqrt{2}}{4}$

7. $\frac{\sqrt{6} + \sqrt{2}}{4}$

8. $\sin\left(\frac{16\pi}{55}\right)$

9. $\frac{1}{2}\sqrt{2 - \sqrt{2}}$

10. $C = 67^\circ, b = 9.5, c = 9.8$

11. $C = 111^\circ, a = 14.5, c = 21$

12. One

13. 540 m

14. $a = 11, C = 29.3^\circ, B = 99.7^\circ$

15. $A = 33^\circ, B = 92.1^\circ, C = 54.9^\circ$

16. 128.08 cm²

17. 12,673.69

18. 345.3

19. 407.5 ft

20. $\cos x \csc x \tan x$

$$= (\cos x) \left(\frac{1}{\sin x} \right) \left(\frac{\sin x}{\cos x} \right)$$

$$= 1$$

21.
$$\frac{1 - \sin t}{\cos t}$$
$$= \left(\frac{1 + \sin t}{1 + \sin t} \right) \left(\frac{1 - \sin t}{\cos t} \right)$$

$$= \frac{1 - \sin^2 t}{\cos t (1 + \sin t)}$$

$$= \frac{\cos^2 t}{\cos t (1 + \sin t)}$$

$$= \frac{\cos t}{1 + \sin t}$$

22. $\sin^3 x \cos^2 x$

$$= \sin x (\sin^2 x \cos^2 x)$$

$$= \sin x (1 - \cos^2 x) (\cos^2 x)$$

$$= \sin x (\cos^2 x - \cos^4 x)$$

23. $\sin \left(x + \frac{\pi}{2} \right)$

$$= \sin x \cos \frac{\pi}{2} + \cos x \sin \frac{\pi}{2}$$

$$= \sin x (0) + \cos x (1)$$

$$= \cos x$$

$$\begin{aligned} 24. \quad & \sin(x + y) - \sin(x - y) \\ &= \sin x \cos y + \cos x \sin y - (\sin x \cos y - \cos x \sin y) \\ &= \sin x \cos y + \cos x \sin y - \sin x \cos y + \cos x \sin y \\ &= 2 \cos x \sin y \end{aligned}$$