

January 2008 Southwest Florida Invitational
Precalculus Team Answers

1. A. 40
B. -182
C. -80
D. $\frac{3}{4}x^2 + 2x - \frac{43}{4}$
2. A. 5
B. $\frac{1}{10}$
C. $\frac{11}{50}$
D. $\frac{1}{3}$
3. A. $\frac{42\sqrt{37}}{37}\bar{i} - \frac{7\sqrt{37}}{37}\bar{j}$
B. $\sqrt{665}$
C. $26\bar{i} - 11\bar{j} + 17\bar{k}$
D. 167
4. A. -80
B. 256
C. 4
D. 254
5. A. 0
B. 91
C. $\frac{16i}{9}$ or $\frac{16}{9}i$
D. $(\frac{\sqrt{3}}{3} + \frac{1}{3}i)$ or $\frac{\sqrt{3} + i}{3}$

6. A. $\frac{1}{4}$
B. $\frac{1}{16}$
C. $\frac{1+\sqrt{3}}{2}$
D. $\sqrt{10+4\sqrt{3}}$
7. A. 59
B. 2
C. 119
D. $\frac{4}{9}$
8. A. $\sqrt{2}-1$
B. $\frac{\pi}{12}$
C. circle
D. 4π
9. A. 5
B. (2,-3)
C. $4\sqrt{5}-5$
D. $\frac{25\pi}{2}$
10. A. 0
B. $\frac{255}{257}$
C. $\frac{1}{2}\ln(3)$ or $\ln(\sqrt{3})$
D. 4
11. A. $\sqrt{32}-2$
B. $\sqrt{19}$
C. $\sqrt{6}$
D. $\frac{37\sqrt{85}}{85}$

12.A. $(\frac{\pi^2}{6} - 1) \text{ or } \frac{\pi^2 - 6}{6}$

B. $(\frac{\pi^2}{6} + 1) \text{ or } \frac{\pi^2 + 6}{6}$

C. $\frac{\pi^2}{24}$

D. $\frac{\pi^2}{12}$

13.A. 5

B. 0

C. 4

D. $6-i$

14.A. FALSE

B. TRUE

C. FALSE

D. TRUE

15.A. 2

B. 1036

C. 12

D. 4992