Review of PreCalc 11
Answer Section

MULTIPLE CHOICE

1. ANS: C PTS: 1 DIF: Moderate REF: 1.1 Arithmetic Sequences
LOC: 11.RF9 TOP: Relations and Functions KEY: Procedural Knowledge

2. ANS: D PTS: 1 DIF: Moderate REF: 1.4 Geometric Series
LOC: 11.RF10 TOP: Relations and Functions KEY: Procedural Knowledge

3. ANS: C PTS: 0 DIF: Easy
REF: 2.3 Adding and Subtracting Radical Expressions LOC: 11.AN2
TOP: Relations and Functions KEY: Procedural Knowledge

4. ANS: A PTS: 1 DIF: Moderate
REF: 1.5 Graphing Geometric Sequences and Series LOC: 11.RF9 | 11.RF10
TOP: Relations and Functions KEY: Conceptual Understanding

5. ANS: A PTS: 1 DIF: Moderate
REF: 1.5 Graphing Geometric Sequences and Series LOC: 11.RF9 | 11.RF10
TOP: Relations and Functions KEY: Conceptual Understanding

6. ANS: C PTS: 0 DIF: Moderate
REF: 2.4 Multiplying and Dividing Radical Expressions LOC: 11.AN2
TOP: Relations and Functions KEY: Conceptual Understanding | Procedural Knowledge

7. ANS: A PTS: 0 DIF: Easy
REF: 3.1 Factoring Polynomial Expressions LOC: 11.RF1
TOP: Relations and Functions KEY: Procedural Knowledge

8. ANS: A PTS: 0 DIF: Moderate
REF: 3.3 Using Square Roots to Solve Quadratic Equations LOC: 11.RF5
TOP: Relations and Functions KEY: Procedural Knowledge

9. ANS: D PTS: 0 DIF: Easy
REF: 3.3 Using Square Roots to Solve Quadratic Equations LOC: 11.RF5
TOP: Relations and Functions KEY: Procedural Knowledge

10. ANS: D PTS: 0 DIF: Easy
REF: 3.3 Using Square Roots to Solve Quadratic Equations LOC: 11.RF5
TOP: Relations and Functions KEY: Procedural Knowledge

11. ANS: B PTS: 0 DIF: Easy
REF: 4.2 Solving a Quadratic Equation Graphically LOC: 11.RF5
TOP: Relations and Functions KEY: Conceptual Understanding

12. ANS: A PTS: 0 DIF: Easy
REF: 5.5 Solving Systems of Equations Algebraically LOC: 11.RF6
TOP: Relations and Functions KEY: Procedural Knowledge

13. ANS: B PTS: 0 DIF: Moderate REF: 7.1 Equivalent Rational Expressions
LOC: 11.AN4 TOP: Algebra and Number
KEY: Conceptual Understanding | Procedural Knowledge

14. ANS: D PTS: 0 DIF: Easy REF: 8.1 Absolute Value Functions
LOC: 11.RF2 TOP: Relations and Functions KEY: Conceptual Understanding

15. ANS: B PTS: 0 DIF: Easy REF: 8.1 Absolute Value Functions
LOC: 11.RF2 TOP: Relations and Functions
KEY: Conceptual Understanding | Procedural Knowledge

16. ANS: C PTS: 0 DIF: Easy
REF: 4.4 Analyzing Quadratic Functions of the Form y = a(x - p)^2 + q
LOC: 11.RF3 TOP: Relations and Functions KEY: Conceptual Understanding

17. ANS: D PTS: 0 DIF: Easy
REF: 8.2 Solving Absolute Value Equations LOC: 11.RF2
TOP: Relations and Functions KEY: Conceptual Understanding

18. ANS: A PTS: 0 DIF: Moderate
REF: 8.3 Graphing Reciprocals of Linear Functions LOC: 11.RF11
TOP: Relations and Functions KEY: Conceptual Understanding | Procedural Knowledge

19. ANS: A PTS: 0 DIF: Easy
REF: 8.2 Solving Absolute Value Equations LOC: 11.RF2
TOP: Relations and Functions KEY: Procedural Knowledge

SHORT ANSWER

1. ANS:

The common ratio is $\frac{1}{3}$, which is between 0 and 1, so the partial sums increase and approach a constant value.

PTS: 1 DIF: Moderate REF: 1.5 Graphing Geometric Sequences and Series
LOC: 11.RF9 | 11.RF10 TOP: Relations and Functions
KEY: Conceptual Understanding

2. ANS:
$y = (x + 1)^2 + 2$

PTS: 0 DIF: Moderate
REF: 4.4 Analyzing Quadratic Functions of the Form y = a(x - p)^2 + q
LOC: 11.RF3 TOP: Relations and Functions
KEY: Conceptual Understanding | Procedural Knowledge

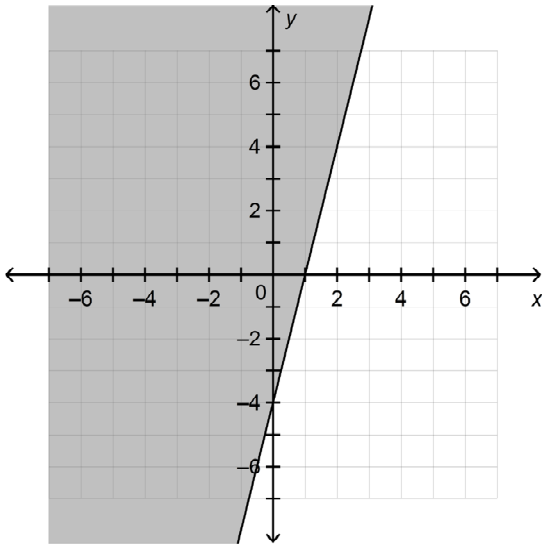
3. ANS:
y-intercept: –4
x-intercepts: 4 and –2
equation of the axis of symmetry: $x = 1$
coordinates of the vertex: (1, –4.5)

PTS: 0 DIF: Moderate
REF: 4.6 Analyzing Quadratic Functions of the Form y = ax^2 + bx + c
LOC: 11.RF4 TOP: Relations and Functions
KEY: Conceptual Understanding | Procedural Knowledge

4. ANS:
Sample answer: $(x + 7)(x - 4) \geq 0$, or $x^2 + 3x - 28 \geq 0$

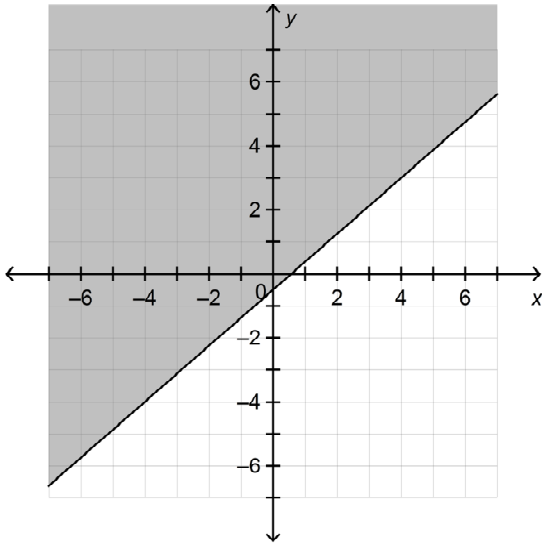
PTS: 0 DIF: Difficult REF: 5.1 Solving Quadratic Inequalities in One Variable
LOC: 11.RF8 TOP: Relations and Functions
KEY: Conceptual Understanding | Procedural Knowledge

5. ANS:



PTS: 0 DIF: Moderate REF: 5.2 Graphing Linear Inequalities in Two Variables
LOC: 11.RF7 TOP: Relations and Functions
KEY: Conceptual Understanding | Procedural Knowledge

6. ANS:



PTS: 0 DIF: Moderate REF: 5.2 Graphing Linear Inequalities in Two Variables
LOC: 11.RF7 TOP: Relations and Functions
KEY: Conceptual Understanding | Procedural Knowledge

7. ANS:
A linear-quadratic system may have 2 solutions, 1 solution, or no solution.
A quadratic-quadratic system may have 2 solutions, 1 solution, no solution, or infinite solutions.

PTS: 0 DIF: Easy REF: 5.5 Solving Systems of Equations Algebraically
LOC: 11.RF6 TOP: Relations and Functions
KEY: Communication | Conceptual Understanding

8. ANS:
The solutions are: (5, 0) and (1, 16)

PTS: 0 DIF: Moderate REF: 5.5 Solving Systems of Equations Algebraically
LOC: 11.RF6 TOP: Relations and Functions KEY: Procedural Knowledge

9. ANS:
Yes, the Sine Law can be used; KL = 11.4 cm.

PTS: 0 DIF: Moderate REF: 6.4 The Sine Law
LOC: 11.T3 TOP: Trigonometry
KEY: Conceptual Understanding | Procedural Knowledge

10. ANS:
$\frac{4m^3 - 36m + mn^2 - 3n^2}{4mn^3}$, $m \neq 0, n \neq 0$

PTS: 0 DIF: Moderate
REF: 7.3 Adding and Subtracting Rational Expressions with Monomial Denominators
LOC: 11.AN5 TOP: Algebra and Number
KEY: Conceptual Understanding | Procedural Knowledge