

Name _____
Date _____

MTH 104 Intermediate Algebra
Class #28 – Review Night #1

Final Exam Review #1

Section 1. Evaluating Expressions.

1. Evaluate: $f(x) = x^2 - 5x - 6$ for $f(-5)$

2. Solve for Roots and Check: $0 = x^2 + 4x - 21$

3. Evaluate: $f(x) = x^3 - 8x$ for $f(-3)$

4. Solve for Roots and Check: $35 = x^2 + 2x$

5. Evaluate: $f(x) = x^2 - 5x + 4$ for $f(4)$

6. Solve for Roots and Check: $42 = x^2 - x$

Section 2. Sum and Difference of Cubes

1. Factor the Sum of Cubes: $x^3 + 125$
2. Factor the Difference of Squares. $25x^2 - 81$
3. Factor the Trinomial with $a = 1$, $x^2 + 14x + 48$
4. Factor the Difference of Cubes: $x^3 - 64$
5. Factor the Difference of Squares. $\frac{25}{36}x^2 - \frac{1}{4}$
6. Factor the Trinomial with $a = 1$, $x^2 - 11x - 26$

Section 3. Positive and Rational Exponents

1. Simplify: $(27x^6)^{2/3}$

2. Simplify: $\frac{12x^2y^{-3}}{6x^{-3}y}$

3. Simplify: $4\sqrt{12} - 3\sqrt{27}$

4. Simplify: $(16x^{12})^{3/4}$

5. Simplify: $\left(\frac{2a^5b^{-2}}{c^4}\right)^{-2}$

6. Simplify: $-3\sqrt{20} - 5\sqrt{125} + \sqrt{5}$

Section 4. Literal Equations and Polynomials

1. Solve for p : $I = p + prt$

2. Multiply: $(x + 5)(2x^2 - 3x - 5)$

3. Divide Using Long Division: *Divide:* $2a^3 + 5a^2 - 9a + 15$ by $a + 5$

4. Divide Using Synthetic Division: $\frac{x^3 + 3x^2 + 5x + 9}{x + 1}$

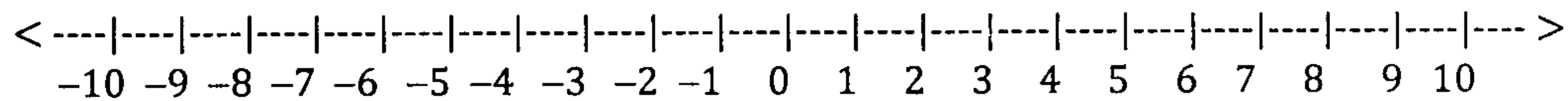
5. Solve for r : $rx + ry = t$

6. Multiply: $(2x - 3)(4x^2 + 8x - 5)$

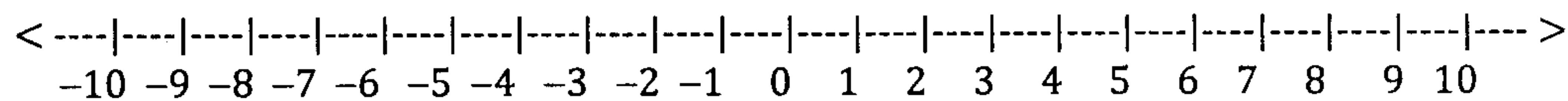
7. Divide Using Long Division $\frac{8x^2 - 18x - 11}{4x - 1}$

8. Divide Using Synthetic Division: $\frac{3x^3 + 7x^2 - 4x + 16}{x + 3}$

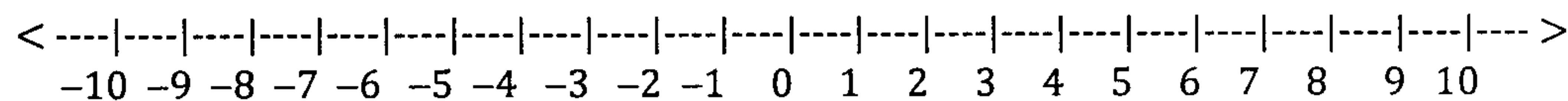
1. Graph the Solution Set: $-3 < x + 5 \leq 8$



2. Solve and Graph the Solution Set: $|x - 5| > 3$



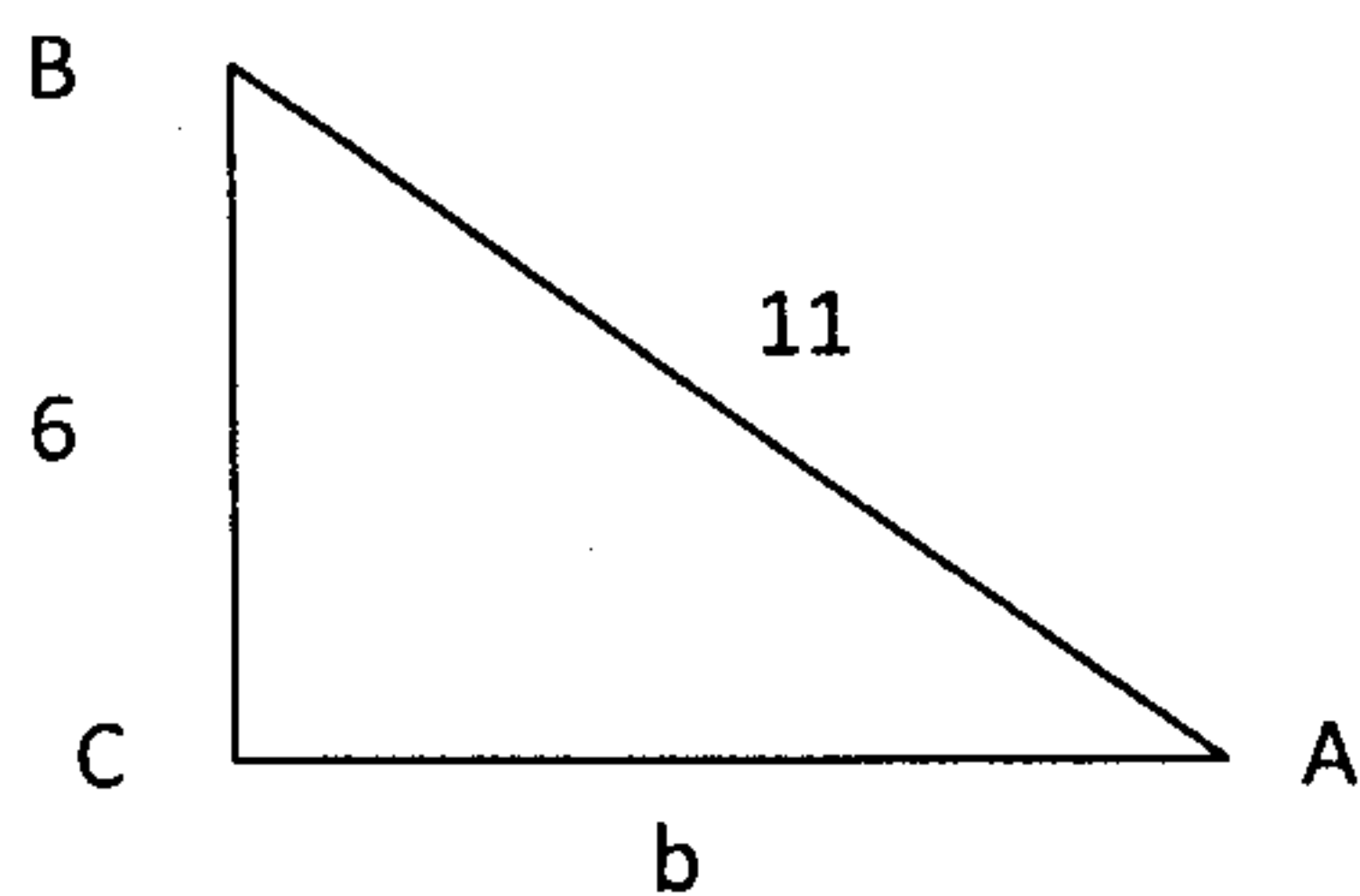
3. Solve and Graph the Solution Set: $|x + 2| - 5 \leq 1$



4. Solve and Check: $\sqrt{2x + 3} = 25$

5. Solve and Check: $\sqrt{y + 5} + 7 = 10$

6. Given the Right Triangle ABC, Find the EXACT VALUES for: $\sin A$, $\cos A$, and $\tan A$. Express all answers in simplified radical form:



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