

Trigonometry Pre-Class Packet

Name _____ Period _____

Bring this completed assignment with you on the first day of class. You must clearly label, copy, and complete each problem on a separate piece of paper and attach it to this packet. Do not complete the packet in a notebook. You must show all work to receive credit for the assignment.

Simplify and write all exponents as positive exponents.

1. $(x - 3)^2$

2. $(2x + 3)(x + 6)^2$

3. $4x(2x^2 - 6x)$

4. $(2x^{-2}y^4z^0)^3$

5. $\frac{(2a^4)(3a^2)}{6a^3}$

6. $\frac{2x^{-3}}{14x^{-3}}$

Evaluate each expression for $a = -4$ and $b = 5$.

7. $7(a + 4) + 3b$

8. $a^2 - 12b$

9. $b^3 - a$

10. $\frac{a}{2} - 2(a + b)$

Factor each expression, completely.

11. $2x^3 - 6x$

12. $x^2 - 10x + 24$

13. $4x^2 - 12x + 9$

14. $4x^2 - 8x - 12$

15. $x^2 - x - 6$

16. $2x^3 - x^2 - 6x + 3$

17. $4x^2 - 25$

18. $6x^2 - 54$

Solve for the zeroes using factoring.

19. $x^2 + 6x - 16 = 0$

20. $2x^2 - 9x + 7 = 0$

21. $4x^2 - 9 = 0$

Solve for the zeroes using the quadratic formula.

22. $2x^2 + 6x + 7 = 0$

23. $3x - 2x^2 = -2$

24. $x^2 - 4x + 20 = 0$

Simplify.

$$25. \frac{\frac{2}{3}}{\frac{1}{9}}$$

$$26. \frac{2}{3} + \frac{3}{4}$$

$$27. \frac{3}{4} \cdot \left(-\frac{2}{3}\right)$$

Solve.

$$28. \frac{x+3}{2x} = \frac{5}{8}$$

$$29. \frac{2x-4}{6} = \frac{x-2}{3}$$

For each set of ordered pairs, find the slope of the line through the points and the distance between them. Be sure to simplify all answers.

$$30. (1, 4) \text{ and } (8, 4)$$

$$31. (-2, 3) \text{ and } (4, -7)$$

$$32. (-2, -5) \text{ and } (-2, 9)$$

Simplify each expression completely.

$$33. \sqrt{108}$$

$$34. 4\sqrt{45}$$

$$35. 3\sqrt{12} + 3\sqrt{27}$$

$$36. 2\sqrt{50} - 12\sqrt{8}$$

Rationalize the denominator and simplify the answer. No decimal answers!

$$37. \frac{1}{\sqrt{3}}$$

$$38. \frac{2}{\sqrt{2}}$$

$$39. \frac{2}{2+\sqrt{3}}$$

Describe the transformations applied to $y = x^2$ for the following functions.

$$40. y = 2x^2$$

$$41. y = -x^2$$

$$42. y = (x - 1)^2$$

$$43. y = x^2 - 3$$

$$44. y = \frac{1}{3}(x + 2)^2 + 1$$

Find the area and the circumference for the circles with the following characteristics. Give both the exact answer (with π) and approximate answer (rounded to the nearest tenth).

45. $r = 1$ cm

46. $d = 4$ inches

47. $r = 2.5$ mm

Use the Pythagorean Theorem to find the missing side of a right triangle $\triangle ABC$ with $C = 90^\circ$. Leave your answer in simplified radical form (no decimals).

48. $a = 7, b = 24$

49. $b = 11, c = 13$

50. $a = 54, c = 100$

51. $a = 30, b = 16$

Use the rule for special right triangles to find the sides and angles of the following triangles.

