

A2T

WRR #18 } SHOW ALL WORK!

Name: _____

Due Thurs 5/22

Part II

Answer all 8 questions in this part. Each correct answer will receive 2 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. All answers should be written in pen, except for graphs and drawings, which should be done in pencil. [16]

28 Show that $\sec \theta \sin \theta \cot \theta = 1$ is an identity.

29 Find, to the *nearest tenth of a square foot*, the area of a rhombus that has a side of 6 feet and an angle of 50° .

30 The following is a list of the individual points scored by all twelve members of the Webster High School basketball team at a recent game:

2 2 3 4 6 7 9 10 10 11 12 14

Find the interquartile range for this set of data.

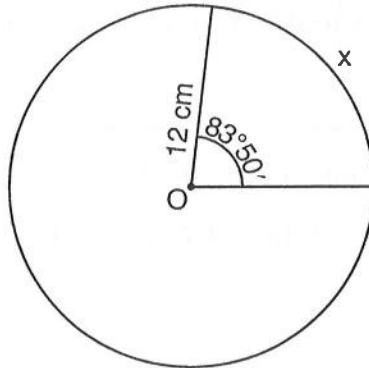
31 Determine algebraically the x -coordinate of all points where the graphs of $xy = 10$ and $y = x + 3$ intersect.

32 Solve $|-4x + 5| < 13$ algebraically for x .

33 Express $4xi + 5yi^8 + 6xi^3 + 2yi^4$ in simplest $a + bi$ form.

34 In an arithmetic sequence, $a_4 = 19$ and $a_7 = 31$. Determine a formula for a_n , the n^{th} term of this sequence.

- 35 Circle O shown below has a radius of 12 centimeters. To the *nearest tenth of a centimeter*, determine the length of the arc, x , subtended by an angle of $83^\circ 50'$.



Part III

Answer all 3 questions in this part. Each correct answer will receive 4 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. All answers should be written in pen, except for graphs and drawings, which should be done in pencil. [12]

36 Solve algebraically for all exact values of x in the interval $0 \leq x < 2\pi$:

$$2 \sin^2 x + 5 \sin x = 3$$

37 Because Sam's backyard gets very little sunlight, the probability that a geranium planted there will flower is 0.28. Sam planted five geraniums. Determine the probability, to the *nearest thousandth*, that *at least* four geraniums will flower.

38 Two sides of a parallelogram measure 27 cm and 32 cm. The included angle measures 48° . Find the length of the longer diagonal of the parallelogram, to the *nearest centimeter*.

Part IV

Answer the question in this part. A correct answer will receive 6 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. A correct numerical answer with no work shown will receive only 1 credit. The answer should be written in pen. [6]

39 Solve algebraically for all values of x :

$$\log_{(x+3)}(2x + 3) + \log_{(x+3)}(x + 5) = 2$$

