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INTEGRATED MATH 2 FINAL EXAM REVIEW MODULES 8-22

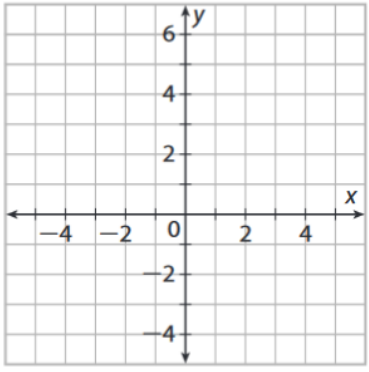
1. What is the end behavior of $f(x) = x^4 + 2x^3 - x$?

2. Based on the discriminant, how many real solutions does $y = -16x^2 + 4x + 13$ have?

3. What are the solutions to the equation $x^2 - 5x - 20 = 0$?

4. What are the solutions to $x^2 + 2x = 8$

5. Graph the equation $y = 2(4)^x$ below?



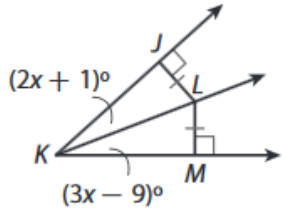
6. The graph of a quadratic function has a vertex at (1, 2) and opens upward. Which of the following statement is NOT true about the graph of the quadratic function?

A. Part of the graph is in Quadrant I.
B. The point (-1, -1) could be on the graph.
C. The point (3, 6) could be on the graph.
D. The graph will have no y-intercepts.

7. What is the intersection of two sets of numbers?

8. Factor the polynomial $x^2 - 4x - 45$.

9. What value of x makes $\overline{KL}$ the angle bisector of ∠JKM?



10. Identify the false statement about angle relationships when two parallel lines are cut by a transversal.

A. Alternate Interior Angles are congruent.
B. Corresponding Angles are supplementary
C. Same Side Interior Angles are supplementary.
D. Vertical Angles are congruent.

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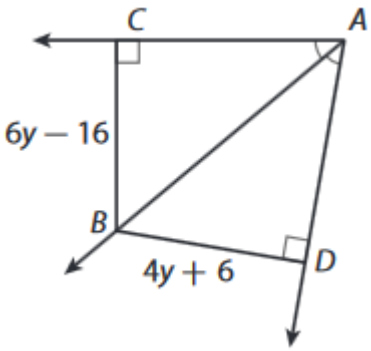
11. What is the length of $\overline{BD}$?



12. Which of the following is not true for all parallelograms?

A. Opposite angles are congruent.
B. Consecutive angles are supplementary.
C. Diagonals are perpendicular.
D. Opposite sides are parallel.

13. State the domain and range of the function: $y = x^2 + 3$.

14. What type of graph grows the fastest?

A. Linear
B. Quadratic
C. Exponential
D. Square Root

15. Solve by factoring $x^2 - 15x = -36$. What are the solutions?

16. Factor $81x^2 - 121$?

17. What is the union of two sets of numbers?

18. What is the center of the circle below?
$(x - 5)^2 + (x + 3)^2 = r^2$

19. What is the vertex of the parabola below?

A. $y = (x - 4)^2 - 7$

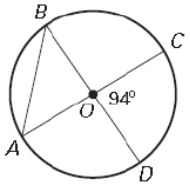
20. What is the sum of the measures of the interior angles of an octagon?

21. A park has two hiking trails. One trail can be modeled by the equation $y = 2x + 3$. The second trail can be modeled by $y = -(x - 1)^2 + 5$. Determine if the paths intersect. If they do find the points of intersection

22. What is 180° in radians?

23. Write the inverse of the function $f(x) = \frac{2x}{5} - 3$

24. Name the chords in the picture.



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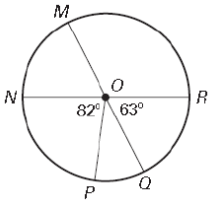
25. How many permutations are there in the word TENNESSEE?

26. Factor the polynomial $9x^2 - 64$ completely.



27. What is the measure of arc RP?

28. What is the measure of arc NRQ?

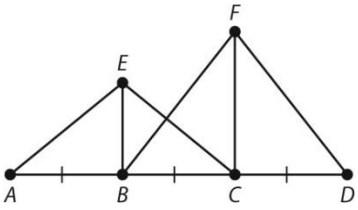
29. Factor $24x^3 - 44x^2 + 12x$

30. Consider a car with a an initial cost of $24,000 that is decreasing in value at a rates of 4.25% each year.

A. Write the exponential decay function described by this situation.

B. After how many years will the value of the car be $15,000? Round your answer to the nearest year.

Use the figure for 31 – 32. $\overline{EB}$ is the perpendicular bisector of $\overline{AC}$, and $\overline{FC}$ is the perpendicular bisector of $\overline{BD}$.

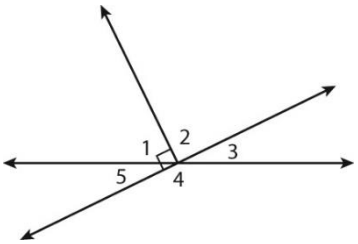


31. If $AE = 8$cm and $FD = 12$ cm, what is FB?

32. If $AC = 10$cm, what is CD?

33. The measures of a pair of vertical angles formed by line BF and line $EC$are $(x + 3)°$ and $(2x - 7)°$. Find the value of x.

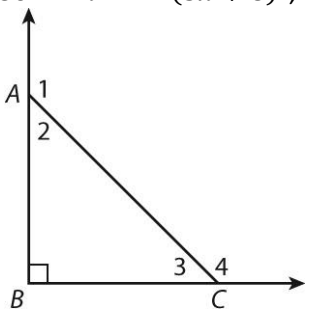
Use the figure for 34-35. In the figure, $m\angle 4 = 162°$.



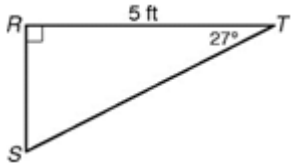
34. What is $m\angle 3$?

35. What is $m\angle 1$?

36. If $m\angle 1 = (3x + 8)°$, what is $m\angle 3$ in terms of x?



Use the figure for 37 – 38.



37. What is RS? Show your work.

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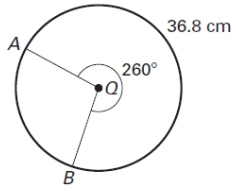
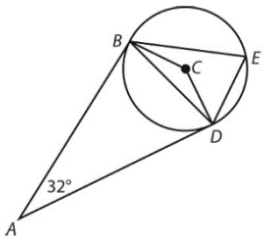
38. What is ST? Show your work.

39. What is the circumference of the circle?



Use the picture for 40-43



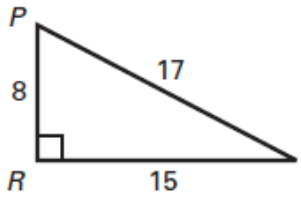
40. m∠BCD

41. m∠CDA

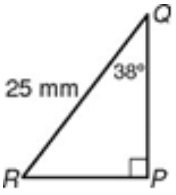
42. m∠BED

43. m∠DBA

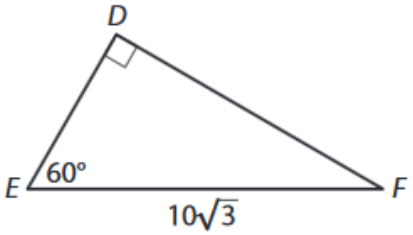
44. Find the measure of Angle P. Round to the nearest tenth of a degree.



45. Find the length of RP to the nearest tenth of a meter.



46. Use the special triangle relationships to find the length of DE and DF.



47. Solve $7x^2 - 19x - 36 = 0$ by factoring.

48. Solve $4x^2 - 17x - 15 = 0$ by using the quadratic formula.