

ALGEBRA 1

Exam 11

Based on Chapter 11 (pages 708-757) in your textbook.

Student's Name _____ Student Number _____

Street _____ City _____ State _____ Zip Code _____

BE SURE YOU FULLY UNDERSTAND ALL CHECKPOINT PROBLEMS FROM THIS CHAPTER BEFORE YOU COMPLETE THIS EXAM. **SHOW AS MUCH WORK AS POSSIBLE.**

Complete the table for each function.

1. $f(x) = \sqrt{x}$

x	0	1	4	9
y				

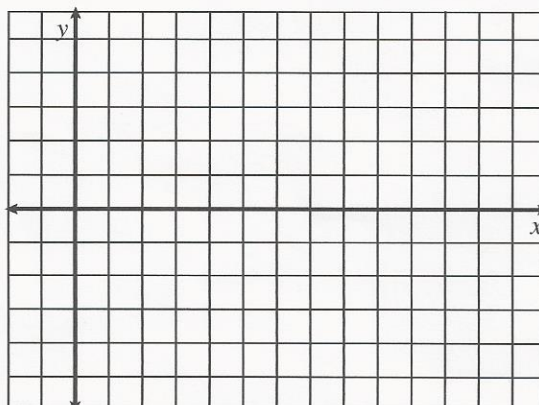
2. $g(x) = -\frac{1}{4}\sqrt{x}$

x	0	1	4	9
y				

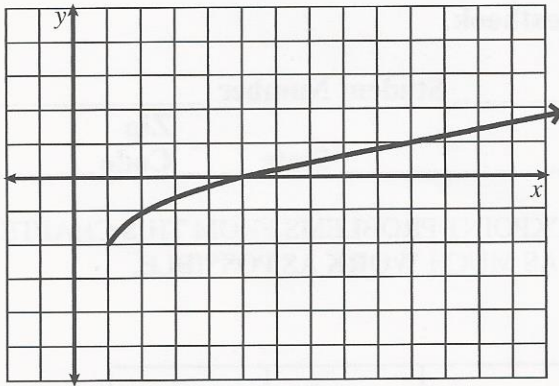
3. $h(x) = \sqrt{x} - 2$

x	0	1	4	9
y				

4. Graph each function from problems 1-3 on the grid below. Be sure to label your graphs.



5. Given the graph below, write the radical function for $f(x)$.



Simplify the expressions and solve the equations. Show all calculations.

6. $2\sqrt{3} - \sqrt{12}$

7. $\sqrt{5p+5} = \sqrt{6p+3}$

8. $\sqrt{28} + \sqrt{63} + \sqrt{175}$

9. $\sqrt{2w+3} + 4 = \sqrt{25}$

(more)

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10. $\frac{\sqrt{18}}{\sqrt{8}-3}$

11. $\sqrt{9y-196} + \sqrt{196} = \sqrt{49}$

12. $\sqrt{x} \left(\sqrt{9} - \frac{4}{3} \right) = \sqrt{25}$

13. $(3-4\sqrt{2})^2$

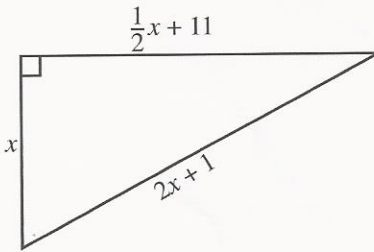
14. $\sqrt{135bc^2d^3} \cdot \sqrt{5b^2d}$

Find the lengths of each side of the following right triangles. Show all calculations.

15. In triangle A, the longer leg is 6 more than the shorter leg and the hypotenuse is 6 more than the longer leg.

Short leg = _____ Long leg = _____ hypotenuse = _____

16.



Short leg = _____ Long leg = _____ hypotenuse = _____

(more)

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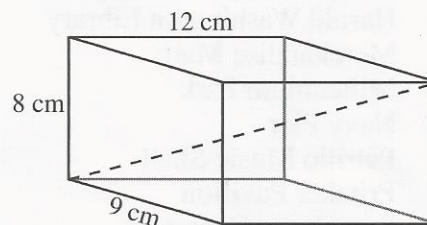
Use formulas from this chapter to complete problems 17-20. Show all Calculations.

17. Find M, the midpoint between A and B, given that $A = (-1, 5)$ and $B = (-3, -7)$.

18. Calculate the distance between A and B. Leave solution in simplest radical form.

19. Find the equation in slope-intercept form of the line that is the perpendicular bisector of the segment between $(-3, 2)$ and $(3, -8)$.

20. In the box shown at the right, what is the length of the dashed line?



Describe and correct the error.

21. Determine if a triangle with sides 28, 45, and 53 is a right triangle.

$$28(2) + 45(2) = 53(2)?$$

$$56 + 90 = 106?$$

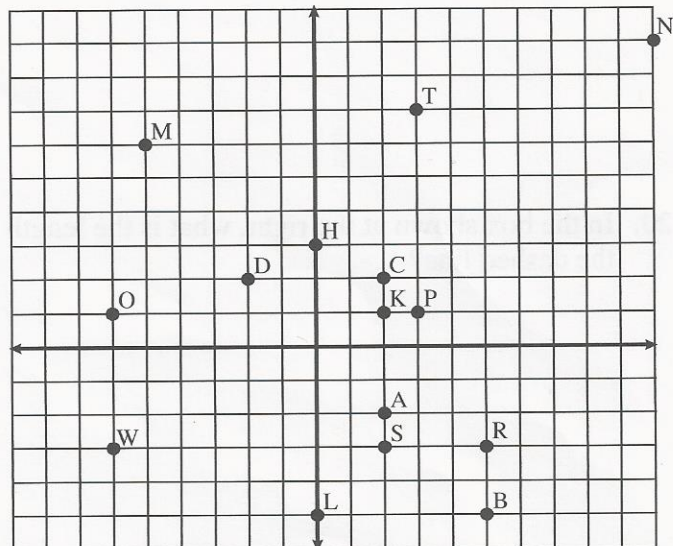
$$146 \neq 106$$

No, it is not a right triangle.

Solve the following word problems.

The grid below shows the approximate locations of some popular Chicago destinations as they relate to the center of the city (at State and Madison). Each has been labeled according to the chart at left. Use this grid to complete problems 22-24 on the next page; remember to show all your calculations using aerial distance.

Art Institute of Chicago	A
Buckingham Fountain	B
Chicago Theater	H
Civic Opera House	O
Chicago Cultural Center	C
Daley Center (Picasso)	D
Harold Washington Library	L
Merchandise Mart	M
Millennium Park	K
Navy Pier	N
Petrillo Music Shell	R
Pritzker Pavilion	P
Symphony Center	S
Tribune Towers	T
Willis (Sears) Tower	W



(more)

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22. How far is the Willis Tower from Navy Pier, given that each unit is approximately $\frac{1}{8}$ mile?
Round your answer to the nearest tenth of a mile.
23. Lily is at Buckingham Fountain and wants to meet David, who is at Millennium Park, for lunch. They want to meet at the landmark that is closet to the midpoint of their locations. At which landmark should they meet?
24. If Anthony wants to end his day at Navy Pier, would it be more efficient to go to the Chicago Theater and then Millennium Park or to Millennium Park and then the Chicago Theater?

25. Tom is buying a 42 inch plasma high definition 1080p television, which is on sale for 40% off. If the aspect ratio for this widescreen is 16:9 and the frame around the screen is 1 inch wide, will it fit in the entertainment center he bought last week for \$753 if its opening is 36 inches by 24 inches? Show work that supports your conclusions and remember that televisions are measured diagonally.

FILL IN YOUR NAME AND THE OTHER REQUIRED INFORMATION ON EACH PAGE OF THE EXAM AND MAIL THE EXAM TO THE SCHOOL.