

3-25-17

ALGEBRA 1

Alternate Exam 11

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

Student's Name _____

Street _____ City _____ State _____ Code _____

BE SURE YOU FULLY UNDERSTAND THE CORRECTIONS ON THE ORIGINAL EXAM 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				

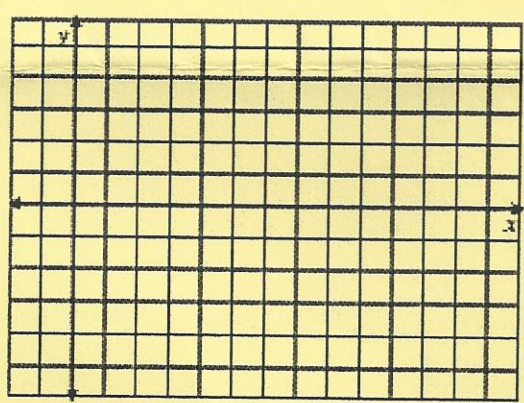
2. $g(x) = 1.5\sqrt{x}$

x	0	1	4	9
y				

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

x	0	1	4	9
y				

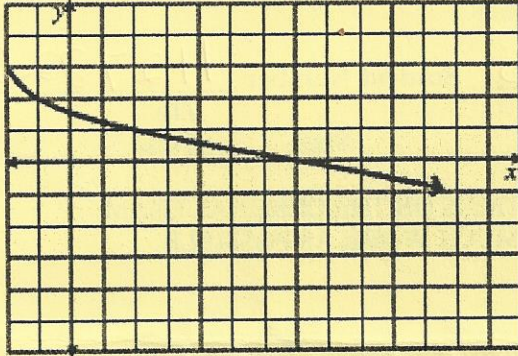
4. Graph each function from problems 1-3 on the grid below. Be sure to label your graphs.



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



Simplify the expressions and solve the equations.

6. $2\sqrt{x} = \sqrt{12}$

7. $\sqrt{80b^2} - b\sqrt{125}$

8. $3\sqrt{2} + y - \sqrt{18}$

9. $\frac{7x}{\sqrt{x}} - \frac{8\sqrt{x}}{2}$

(more)

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10. $\sqrt{\frac{1}{2}c + 6} - \sqrt{3c - 9}$

11. $(5 + 6\sqrt{7})^2$

12. $\sqrt{\frac{75t^3}{3tv}}$

13. $\sqrt{4z + 16} + 9 - \sqrt{225}$

14. $\frac{\sqrt{24}}{6 - \sqrt{6}}$

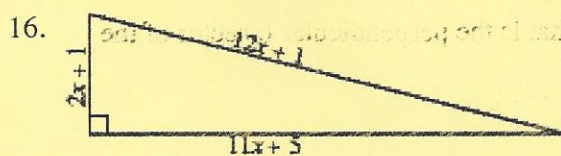
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Find the lengths of each side of the following right triangles.

15. In triangle F , the shorter leg is 1 less than one-third of the longer leg while the hypotenuse is 1 more than the longer leg.

Short leg = _____ Long leg = _____ Hypotenuse = _____



Short leg = _____ Long leg = _____ Hypotenuse = _____

(more)

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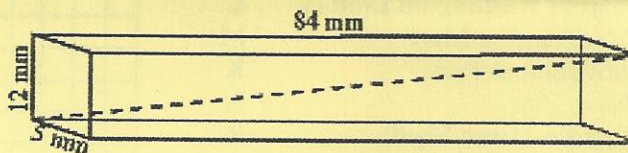
Use formulas from this chapter to complete problems 17-20.

17. If M is the midpoint of segment AB , find the coordinates of B ; given that $A = (-8, 9)$ and $M = (-6, 6)$.

18. Calculate the distance between A and B .

19. Find the equation in point-slope form of the line that is the perpendicular bisector of the segment between $(16, -4)$ and $(-2, -76)$.

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



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Describe and correct the error.

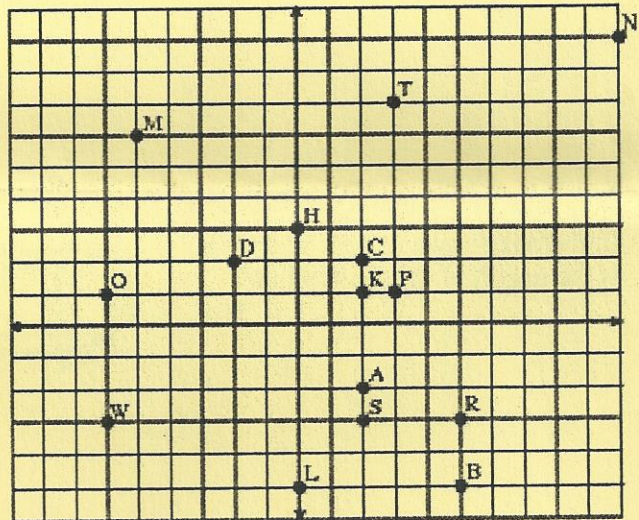
21. Simplify the expression.

$$\frac{3 + \sqrt{3}}{5 - \sqrt{5}} \left(\frac{5 + \sqrt{5}}{5 + \sqrt{5}} \right) = \frac{15 + \sqrt{15}}{25 - 5} = \frac{15 + \sqrt{15}}{20}$$

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 Merchandise Mart from Navy Pier, given that each unit is approximately $\frac{1}{8}$ mile? Round your answer to the nearest tenth of a mile.
23. Abby and Josh want to meet for dinner before Abby goes to a show at the Chicago Theater and Josh goes to a concert at Symphony Center. They want to meet at the landmark that is closest to the midpoint of their after-dinner locations. At which landmark should they meet?
24. If Sophia wants to conclude her trip by seeing the Picasso at Daley Plaza, would it be more efficient to start her day at Millennium Park and then go to the opera or to see an opera and then go to Millennium Park?

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25. Sandy purchases an entertainment center on clearance at 65% off that has an opening measuring 42 inches by 20.5 inches. If widescreen televisions (16:9 aspect ratio) are on sale at the local electronics store for the next 3 days, what is the maximum screen size that Sandy should purchase, assuming that each screen has a 1 inch wide frame bordering the screen?

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