

CHAPTER 11

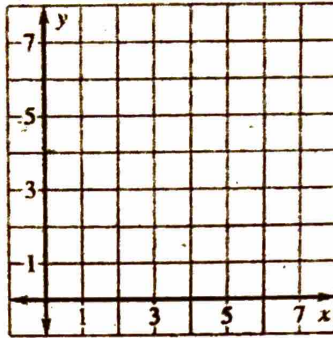
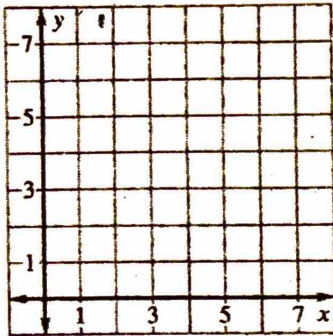
Chapter Test
For use after Chapter 11

* Leave answers in radical form, except #14 and #19 *

Graph the function and identify its domain and range. Then compare the graph with the graph of $y = \sqrt{x}$.

1. $y = 3\sqrt{x}$

2. $y = \sqrt{x-1}$



Simplify the expression.

3. $\sqrt{32}$

4. $\sqrt{\frac{9}{16}}$

5. $\frac{4}{\sqrt{11}}$

6. $\sqrt{81x^6y^3}$

7. $3\sqrt{5} - 7\sqrt{5}$

8. $\sqrt{2}(10 - \sqrt{2})$

In Exercises 9 and 10, use the figure.

9. Find the exact perimeter of the rectangle.

10. Find the exact area of the rectangle.



Solve the equation. Check for extraneous solutions.

11. $\sqrt{3x} + 2 = 5$

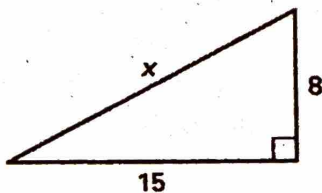
12. $\sqrt{5x+2} = \sqrt{3x+8}$

13. $\sqrt{4x-3} = x$

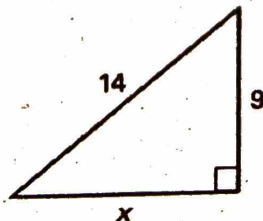
14. Near the Earth's surface, the speed of sound s (in meters per second) through air is given by $s = 20\sqrt{T} + 273$ where T is the air temperature (in degrees Celsius). At what air temperature is the speed of sound about 340 meters per second?

Find the unknown length.

15.



16.



Answers

1. See left.

2. See left.

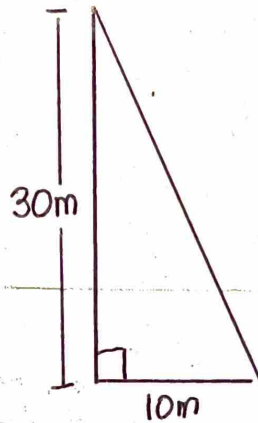
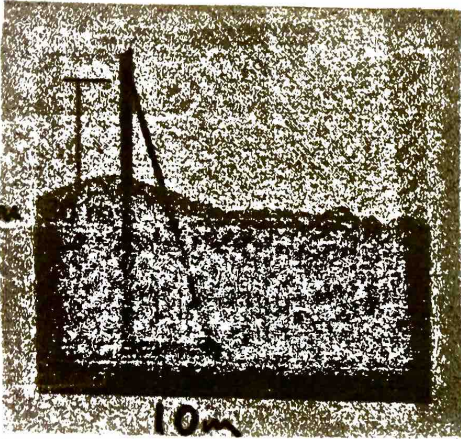
- 3. _____
- 4. _____
- 5. _____
- 6. _____
- 7. _____
- 8. _____
- 9. _____
- 10. _____
- 11. _____
- 12. _____
- 13. _____
- 14. _____
- 15. _____
- 16. _____

Tell whether the triangle with the given side lengths is a right triangle.

17. 12, 16, 20

18. 8, 11, 14

19. A support wire is attached to a telephone pole at a point 30 meters above the ground. The wire is anchored to the ground at a point 10 meters from the base of the pole. Find the length of the wire to the nearest tenth of a meter.

**Answers**

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

23. _____

24. _____

Simplify the expression.

20. $3\sqrt{50}$

21. $\sqrt{12x} \cdot \sqrt{3xy}$

22. $\frac{10m}{\sqrt{5}}$

23. $\sqrt{\frac{125}{k^3}}$

24. $\sqrt{\frac{121g^2}{h^4}}$

Extra Credit: Simplify. $\sqrt{\frac{200a^2b}{c^3}}$

Ec. _____

Extra Credit:

① What was Pythagoras' nationality?

② When did he live?

③ List 3 of the things he is known for (excluding the Pythagorean Theorem).