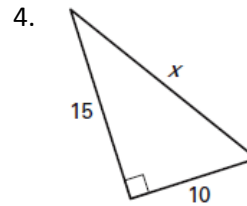
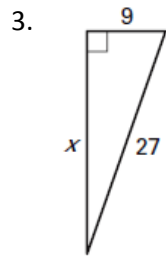
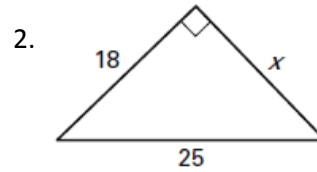
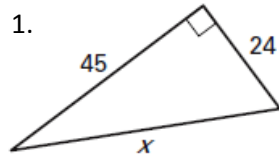


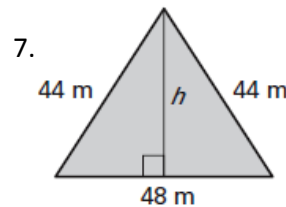
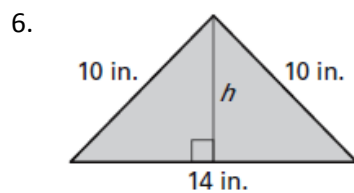
Find the value of x . Write your answer in simplest radical form.



5. **Multiple Choice** What is the length of the hypotenuse of a right triangle with leg lengths of 21 inches and 28 inches?

- A) 30 inches B) 35 inches C) 40 inches D) 42 inches

Find the area of the isosceles triangle. Write your answer in simplest radical form.



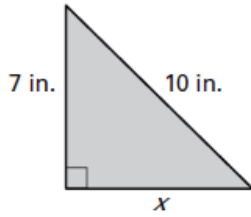
Find the area of a right triangle with given leg ℓ and hypotenuse h . Round decimal answers to the nearest tenth.

8. $\ell = 13$ cm, $h = 19$ cm

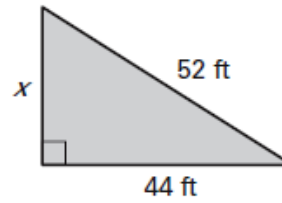
9. $\ell = 18$ in., $h = 32$ in.

Find the area of the right triangle. Write your answer in simplest radical form.

10.



11.



The given lengths are two sides of a right triangle. All three side lengths of the triangle are integers and together form a Pythagorean Triple. Find the length of the third side and tell whether it is a leg or a hypotenuse.

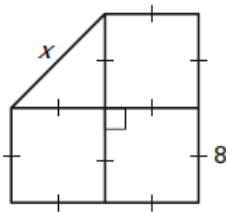
12. 24 and 32

13. 72 and 78

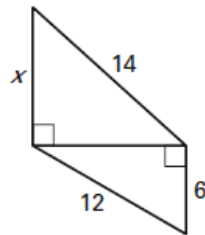
14. 40 and 85

Find the unknown side length x . Write your answer in simplest radical form.

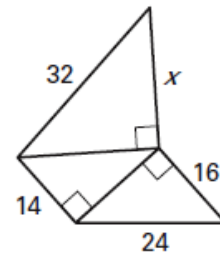
15.



16.

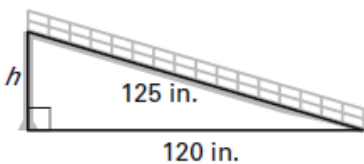


17.



Applications

18. A shipping dock has a mobile ramp that is used to help load and unload cargo from trucks. The ramp is 125 inches long and has a base that is 120 in. long. What is the height h of the ramp?

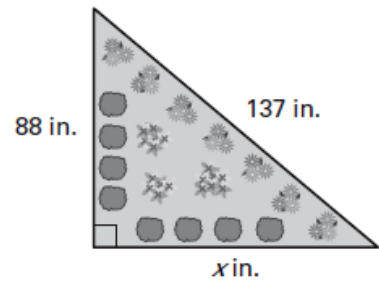


19. The lawn in front of Pythagoras Jr. High is in the shape of a rectangle 24 meters long and 10 meters wide. How many meters shorter is your walk if you walk diagonally across the lawn rather than along the two sides of it?

20. Two jets left an airport at the same time, 8 a.m. One traveled east at 300 miles per hour and the other traveled south at 400 miles per hour. How far apart were the jets at 10 a.m.?

21. You have a garden that is in the shape of a right triangle with the dimensions shown.

- a) Find the perimeter of the garden.



- b) You are going to plant a post every 15 inches around the garden's perimeter. How many posts do you need?

- c) You plan to attach fencing to the posts to enclose the garden. If each post costs \$1.25 and each foot of fencing costs \$.70, how much will it cost to enclose the garden? *Explain.*

Answer Key

- | | | | |
|-------------------------|---|--------------------------------|------------------------|
| 1. 51 | 2. $\sqrt{301}$ | 3. $18\sqrt{2}$ | 4. $5\sqrt{13}$ |
| 5. B | 6. $7\sqrt{51} \text{ in}^2$ | 7. $96\sqrt{85} \text{ m}^2$ | 8. 90.1 cm^2 |
| 9. 238.1 in^2 | 10. $\frac{7\sqrt{51}}{2} \text{ in}^2$ | 11. $352\sqrt{3} \text{ ft}^2$ | 12. 40; hypotenuse |
| 13. 30; leg | 14. 75; leg | 15. $8\sqrt{2}$ | 16. $2\sqrt{22}$ |
| 17. $2\sqrt{127}$ | 18. 35 in. | 19. 8 m | 20. 1000 miles |

21. a) 330 in. b) 22 posts

c) \$46.75; There are 22 posts, so buying 22 posts costs $\$1.25(22) = \27.50 . The perimeter of the garden is 330 inches, or 27.5 feet, so the fencing costs $\$.70(27.5) = \19.25 . The combined cost is $\$27.50 + \$19.25 = \$46.75$