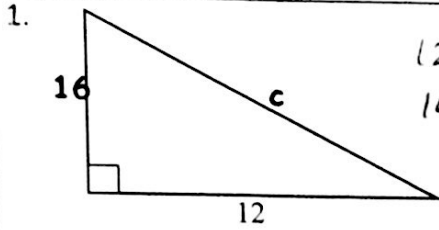Name_____ Date_____ Period_____

Key

Pythagorean Theorem Unit Review

Solve for each variable. Show all work and round each answer to the nearest tenth.

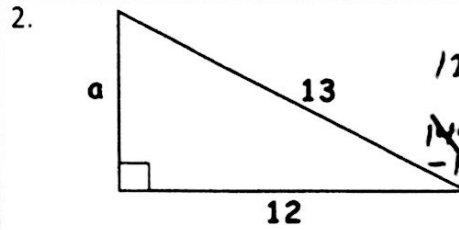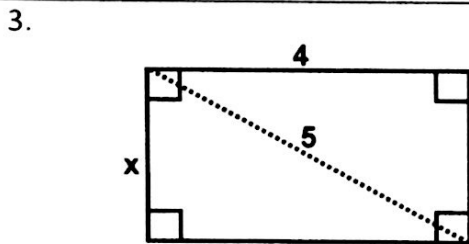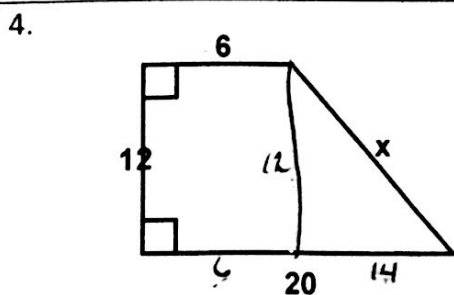|	
1. 16 ⟍ c 12	$12^2 + 16^2 = c^2$ $144 + 256 = c^2$ $\sqrt{400} = \sqrt{c^2}$ $20 = c$
2. a ⟍ 13 12	$12^2 + a^2 = 13^2$ $144 + a^2 = 169$ $-144 \quad\quad -144$ $\sqrt{a^2} = \sqrt{25}$ $a = 5$
3. 4 5 x	$4^2 + b^2 = 5^2$ $16 + b^2 = 25$ $-16 \quad\quad -16$ $\sqrt{b^2} = \sqrt{9}$ $b = 3$
4. x ⟍ 18 30	$18^2 + b^2 = 30^2$ $324 + b^2 = 900$ $-324 \quad\quad -324$ $\sqrt{b^2} = \sqrt{576}$ $b = 24$
4. 6 12 ⎸ 12 ⎸ x 20 ⎸ 14	$12^2 + 14^2 = c^2$ $144 + 196 = c^2$ $\sqrt{340} = \sqrt{c^2}$ $18.4 = c$
6. 6 ⟵18⟶ 12 6 18 ⎸ x	$12^2 + 18^2 = c^2$ $144 + 324 = c^2$ $\sqrt{468} = \sqrt{c^2}$ $21.6 = c$
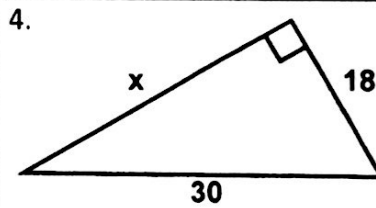
Scanned by CamScanner
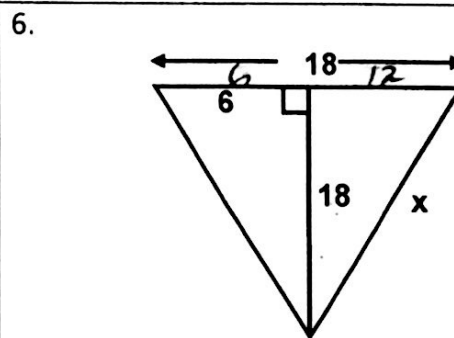
7. 14. What is the diagonal measurement of the TV screen shown in the figure below?
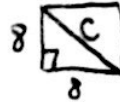
22 in
16 in
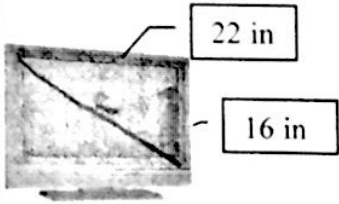
$$16^2 + 22^2 = c^2$$
$$256 + 484 = c^2$$
$$\sqrt{740} = \sqrt{c^2}$$
$$27.2 = c$$
$$in$$

8. Find the length of the diagonal of a square whose side length is 8 inches

$$8^2 + 8^2 = c^2$$
$$64 + 64 = c^2$$
$$\sqrt{128} = \sqrt{c^2}$$
$$11.3 = c$$
$$in$$

9. Ross has a rectangular garden in his backyard. He measures one side of the garden as 22 feet and the diagonal as 33 feet. What is the length of the other side of his garden? Round to nearest tenth.
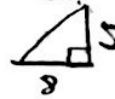
$$22^2 + b^2 = 33^2$$
$$484 + b^2 = 1089$$
$$-484 \qquad -484$$
$$\sqrt{b^2} = \sqrt{605}$$
$$b = 24.6 \ ft$$

10. Troy drove 8 miles due east and then 5 miles due north. How far is Troy from his starting point? Round to nearest tenth.

$$5^2 + 8^2 = c^2$$
$$25 + 64 = c^2$$
$$\sqrt{89} = \sqrt{c^2}$$
$$9.4 = c$$
$$mi$$

Determine if the following numbers are Pythagorean triples. Show all work.

11. 24, 32, 40 $\quad 24^2 + 32^2 = 40^2$ $576 + 1024 = 1600$ Yes $\quad 1600 = 1600$	12. 6, 12, 10 $\quad 6^2 + 10^2 = 12^2$ $36 + 100 = 144$ NO $\quad 136 \neq 144$
13. 9, 10, 11 $\quad 9^2 + 10^2 = 11^2$ $81 + 100 = 121$ NO $\quad 181 \neq 121$	14. 3, 4, 5 $\quad 3^2 + 4^2 = 5^2$ $9 + 16 = 25$ yes $\quad 25 = 25$

15. A triangle has vertices at (-6,-4), (6,-2), and (8,7) in a coordinate plane. Use the graph below to find the lengths of ALL THREE SIDES using the Pythagorean Theorem where necessary.

$(6,-2)$
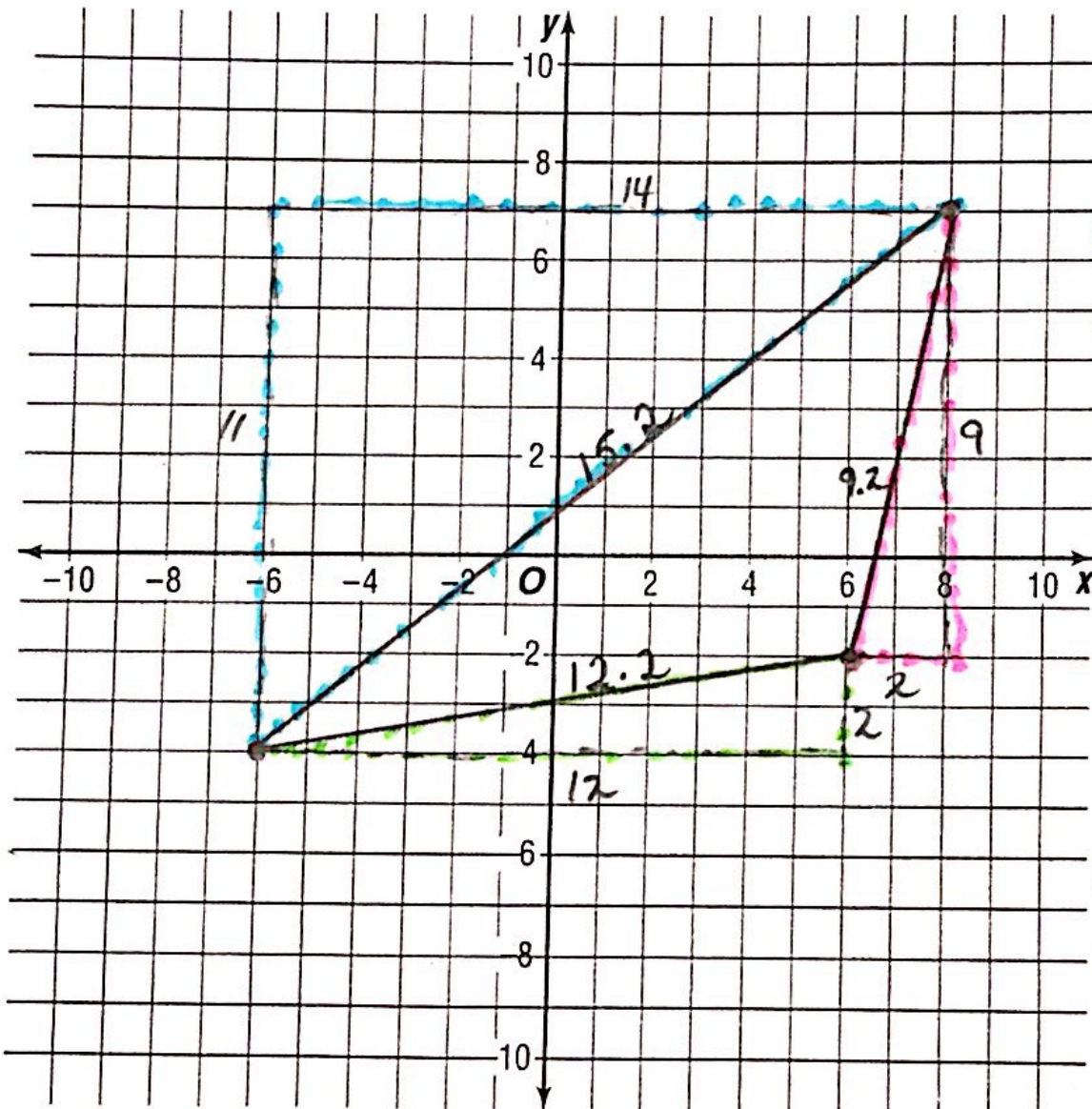
$$11^2 + 14^2 = c^2$$
$$121 + 196 = c^2$$
$$\sqrt{317} = \sqrt{c^2}$$
$$17.8 = c$$

$$2^2 + 9^2 = c^2$$
$$4 + 81 = c^2$$
$$\sqrt{85} = \sqrt{c^2}$$
$$9.2 = c$$

$$2^2 + 12^2 = c^2$$
$$4 + 144 = c^2$$
$$\sqrt{148} = \sqrt{c^2}$$
$$12.2 = c$$