Name _____ Date _____ Class _____
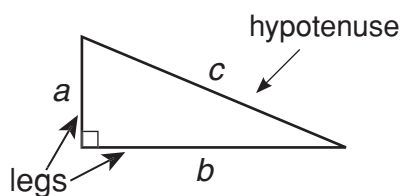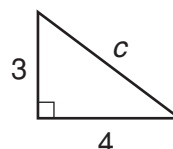
Skills Readiness
Pythagorean Theorem

Pythagorean Theorem

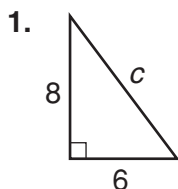If a right triangle has legs of lengths a and b, and a hypotenuse of length c, then $a^2 + b^2 = c^2$.

hypotenuse

c

a

legs

b

Example: Find the length of the hypotenuse of the right triangle.

Answer:
$$a^2 + b^2 = c^2$$
$$3^2 + 4^2 = c^2$$
$$9 + 16 = c^2$$
$$25 = c^2$$
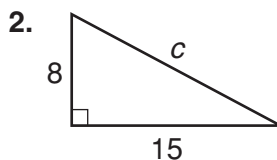$$c = \sqrt{25} = 5 \quad \text{The length of the hypotenuse is 5.}$$
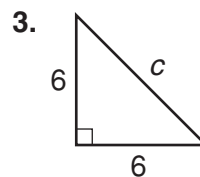
c

3

4

Practice on Your Own
Find the length of the hypotenuse in each right triangle. If the length is not a whole number, give the answer in simplest radical form.
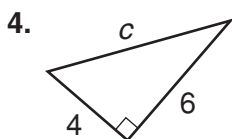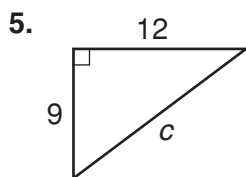
1.

c

8

6

_____

2.

c

8

15

_____

3.

c

6

6

_____

4.

c

4

6

_____

5.

12

9

c

_____

6.

8

2

c

_____

Check
Find the length of the hypotenuse in each right triangle. If the length is not a whole number, give the answer in simplest radical form.
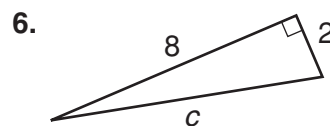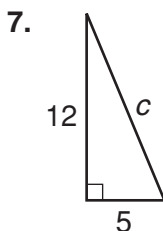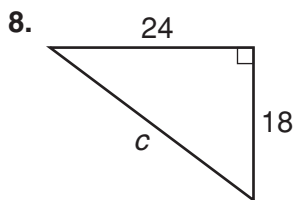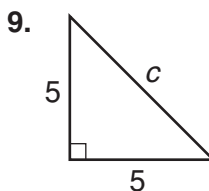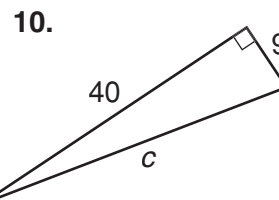
7.

12

c

5

_____

8.

24

c

18

_____

9.

5

c

5

_____

10.

9

40

c

_____

74

Holt McDougal Algebra 1