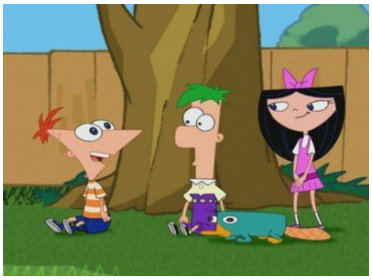

"I know what we're going to do today."

1) warm up- p. 54

2) Go over homework

2) Lesson 2: the converse of the Pythagorean Theorem p. 54b

3) Practice p. 54d

4) homework: 54 e and f

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Pythagorean Theorem Lesson 2

By the end of this less, you will be able to:

- Determine whether a triangle is a right triangle or not.

Some triangles may look like right triangles but in fact they are not.

The converse of the Pythagorean Theorem can be used to test whether a triangle is a right triangle or not.

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Converse of Pythagorean Theorem:

If a triangle is a right triangle, then the side lengths will work in the Pythagorean Theorem.

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Examples:

1) Will the side lengths of 5 cm, 12 cm, and 13 cm create a right triangle?

c

Does $5^2 + 12^2 = 13^2$?

$25 + 144 = 169$

169 ✓

yes, 5, 12, and 13 create a right triangle

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2) Will the side lengths of 9 cm, 12 cm, and 15 cm create a right triangle

c

Does $9^2 + 12^2 = 15^2$

$81 + 144 = 225$

225

yes. 9, 12, and 15 create a right triangle

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3) Do the side lengths of 2, 4, and 6 create a right triangle? Why or why not?

Does $2^2 + 4^2 = 6^2$

$4 + 16 = 36$

$20 < 36$

2, 4, and 6 will not create a right triangle

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4) Do the side lengths of 6, 15, and 20 create a right triangle? Why or why not?

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5) Which numbers can represent the side lengths of a right triangle?

A. 2, 10, 12

B. 6, 8, 10

C. 4, 4, 6

D. 5, 10, 12

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6) Which triangle with sides of the given lengths is a right triangle?

A. 1 cm, 2 cm, 6 cm

B. 9 in, 12 in, 15 in

C. 6 ft, 12 ft, 20 ft

D. 2 m, 2 m, 8 m

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7) Explain how to tell whether a triangle is a right triangle or not.

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Pythagorean Practice 2- Converse of the Pythagorean Theorem

Determine whether each triangle with sides of given lengths is a right triangle.

Show your work for each problem.

1) 18 mi, 24 mi, 30 mi

2) 4 ft, 7 ft, 5 ft

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3) 10 cm, 12 cm, 15 cm

4) 28 yd, 197 yd, 195 yd

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5) 1 ft, 1 ft, $\sqrt{2}$ ft

6) 24 m, 143 m, 145 m

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7) 5 in, 10 in, 12 in

8) 9 m, 40 m, 41 m

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9) What is the length of the other leg of a right triangle if the hypotenuse is 26 inches and one leg is 10 inches?

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