Theory of Graphs and Trees · Partner Check 2

A

Name: _____ Partner's name: _____ Date: _____

Directions: Work alone on your own problems. Partner B has different problems with the same answers. After each problem, compare answers; if they differ, find the mistake together.
Answer conventions: sets in roster form with elements in increasing order, ∅ for the empty set; truth columns as T/F strings in standard row order (TT, TF, FT, FF; with r: TTT, TTF, ..., FFF); fractions in lowest terms; ordered pairs as (x, y).

1

How many edges does K_9 have?

Answer: _____ Match? ☐ Yes ☐ No

2

What is the chromatic number of the cycle C_5?

Answer: _____ Match? ☐ Yes ☐ No

3

How many edges does a tree with 18 vertices have?

Answer: _____ Match? ☐ Yes ☐ No

4

How many edges does a tree with 11 vertices have?

Answer: _____ Match? ☐ Yes ☐ No

5

How many edges does K_2,6 have?

Answer: _____ Match? ☐ Yes ☐ No

6

A graph has degrees 5, 3, 1, 3. How many edges?

Answer: _____ Match? ☐ Yes ☐ No

Theory of Graphs and Trees · Partner Check 2

B

Name: _____ Partner's name: _____ Date: _____

Directions: Work alone on your own problems. Partner A has different problems with the same answers. After each problem, compare answers; if they differ, find the mistake together.
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1

At a party, each of 9 people shakes hands once with every other person. How many handshakes?

Answer: _____ Match? ☐ Yes ☐ No

2

What is the chromatic number of K_3?

Answer: _____ Match? ☐ Yes ☐ No

3

A graph has degree sum 34. How many edges does it have?

Answer: _____ Match? ☐ Yes ☐ No

4

A graph has degree sum 20. How many edges does it have?

Answer: _____ Match? ☐ Yes ☐ No

5

How many edges does a Hamiltonian cycle in a graph with 12 vertices use?

Answer: _____ Match? ☐ Yes ☐ No

6

Every vertex of a graph with 6 vertices has degree 2. How many edges?

Answer: _____ Match? ☐ Yes ☐ No

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1

How many edges does a tree with 11 vertices have?

Answer: _____ Match? ☐ Yes ☐ No

2

What is the chromatic number of the cycle C_7?

Answer: _____ Match? ☐ Yes ☐ No

3

How many edges does K_4,3 have?

Answer: _____ Match? ☐ Yes ☐ No

4

How many edges does K_6 have?

Answer: _____ Match? ☐ Yes ☐ No

5

A graph has degrees 4, 4, 1, 1, 2. How many edges?

Answer: _____ Match? ☐ Yes ☐ No

6

How many edges does a tree with 17 vertices have?

Answer: _____ Match? ☐ Yes ☐ No

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B

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Directions: Work alone on your own problems. Partner A has different problems with the same answers. After each problem, compare answers; if they differ, find the mistake together.
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1

A graph has degree sum 20. How many edges does it have?

Answer: _____ Match? ☐ Yes ☐ No

2

What is the chromatic number of K_3?

Answer: _____ Match? ☐ Yes ☐ No

3

How many edges does a Hamiltonian cycle in a graph with 12 vertices use?

Answer: _____ Match? ☐ Yes ☐ No

4

At a party, each of 6 people shakes hands once with every other person. How many handshakes?

Answer: _____ Match? ☐ Yes ☐ No

5

Every vertex of a graph with 6 vertices has degree 2. How many edges?

Answer: _____ Match? ☐ Yes ☐ No

6

A graph has degree sum 32. How many edges does it have?

Answer: _____ Match? ☐ Yes ☐ No

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1

What is the chromatic number of the cycle C_6?

Answer: _____ Match? ☐ Yes ☐ No

2

How many edges does a tree with 14 vertices have?

Answer: _____ Match? ☐ Yes ☐ No

3

How many edges does a tree with 20 vertices have?

Answer: _____ Match? ☐ Yes ☐ No

4

How many edges does K_3,4 have?

Answer: _____ Match? ☐ Yes ☐ No

5

A graph has degrees 3, 2, 2, 1. How many edges?

Answer: _____ Match? ☐ Yes ☐ No

6

How many edges does K_4 have?

Answer: _____ Match? ☐ Yes ☐ No

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B

Name: _____ Partner's name: _____ Date: _____

Directions: Work alone on your own problems. Partner A has different problems with the same answers. After each problem, compare answers; if they differ, find the mistake together.
Answer conventions: sets in roster form with elements in increasing order, ∅ for the empty set; truth columns as T/F strings in standard row order (TT, TF, FT, FF; with r: TTT, TTF, ..., FFF); fractions in lowest terms; ordered pairs as (x, y).

1

What is the chromatic number of K_2?

Answer: _____ Match? ☐ Yes ☐ No

2

A graph has degree sum 26. How many edges does it have?

Answer: _____ Match? ☐ Yes ☐ No

3

A graph has degree sum 38. How many edges does it have?

Answer: _____ Match? ☐ Yes ☐ No

4

How many edges does a Hamiltonian cycle in a graph with 12 vertices use?

Answer: _____ Match? ☐ Yes ☐ No

5

Every vertex of a graph with 4 vertices has degree 2. How many edges?

Answer: _____ Match? ☐ Yes ☐ No

6

At a party, each of 4 people shakes hands once with every other person. How many handshakes?

Answer: _____ Match? ☐ Yes ☐ No