Pizza Maker Kit - Fun with Pi

Do your best to answer the questions below.
Answers are found in the section titled "Answers", which follows the questions.
Take photos while you build your pizza and post to Instagram with the hashtag #PiPizzaKit & @pi_pizzerias
and we'll select one user to win a $100 Pi gift card.

LEVEL 1

1. Pi Pizza Chef made 10 pizzas for a birthday party. 4 are cheese pizzas, 2 are sausage pizzas, 3 are pepperoni pizzas and 1 is a vegetable pizza.
    - Of which type of pizza did Pi Pizza Chef make the fewest?
    - Of which type of pizza did Pi Pizza Chef make the most?
    - Did Pi Pizza Chef make more or fewer vegetable pizzas than pepperoni pizzas?
    - How many more cheese pizzas did Pi Pizza Chef make than sausage pizzas?

2. If you made a pizza with 10 slices and you, your parent and your dog each ate 1 piece, how many slices would be left?

3. If you made a cheese pizza with 8 slices, but your brother snuck pepperoni on 5 slices, how many = cheese-only slices would you have left?

4. You, your parent and your brother want pepperoni pizza for dinner. Your parent wants 2 pepperoni slices. Your brother wants 1 pepperoni slice and you want 4 pepperoni slices. How many total slices of pepperoni pizza does your family want?

5. If you have 4 people in your house and each person wants to eat 2 slices of pizza for dinner, how many slices of pizza do you need in total?

LEVEL 2

1. If you have 30 pepperoni for your pizza, and you give half to a family member, how many pepperoni do you have left?

2. If you give an equal number of pepperoni to 6 of your friends, how many pepperoni would each of your friends have? If you gave an equal number of pepperoni to 10 of your friends, how many pieces would each friend have?

3. If each pizza costs $10, and you need 8 pizzas for a birthday party, how much will that cost (before tax)? Bonus: if sales tax is 11%, how much total would you pay for your pizzas?

4. If your pizza cost $10, and you split the cost evenly between yourself and your parent, how much would each of you have to pay?

5. How many quarters would you have to pay for your half of the pizza?

6. How many pennies would you have to spend to pay for your half of the pizza?

7. If you ate half of your 8 pizza slices, put the other half in the refrigerator, then find out the next day that your parent ate half of your leftovers, how many slices of pizza do you have left? What % of your original pizza is left?

LEVEL 3
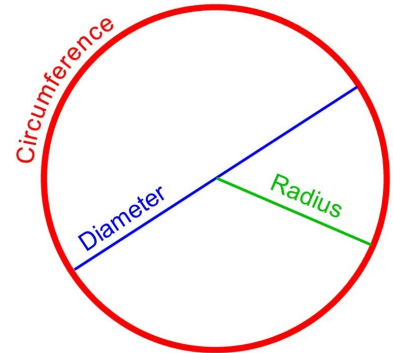
1. If your pizza is .5 inches (1/2 of an inch) tall after you bake it, and you stack 8 slices of pizza on top of each other, how tall is your stack of pizza slices? If you give 4 of those slices to your parent, how tall is your stack of pizza slices?

2. If your Pi dough is stretched or rolled into a circle with a 12" diameter (d), what is the Area of your pizza?, where Area=πr^2? (Hint: r=3.14 or 22/7 and d=2r)

3. Your pizza box is a square with sides of approximately 13". What is the area of the pizza box where the pizza sits (the base)?

4. What % of the pizza box "base" is not covered with pizza after you set your 12" pizza in it?

5. If your pizza costs $10, what is the cost per square inch of the pizza? (Hint: 10/A (calculated above)

6. If you cut your pizza into 8 equal slices, what is the Area of each slice?

7. If you spread cheese evenly across the pizza, and leave .5" (1/2 of one inch) of edge around the entire dough without cheese (as we do at Pi), (a) what is the Area of the pizza with cheese? (b) What is the Area of the pizza without cheese? (c) What percentage of the pizza Area DOES have cheese? (d) What % does NOT have cheese?

8. What is the circumference of your 12" pizza, if Circumference=$2\pi r$?

9. Pi pepperoni are approximately 1.75" in diameter (d). What is the Area of a Pi pepperoni piece, where r=radius, radius=.5d, and Area=πr^2?

10. If your 30 pepperoni are spread across your pizza, with none of the pepperonis overlapping, how much Area of your pizza is covered with Pepperoni?

11. What % of your pizza is covered with pepperoni, where: Coverage=(Area of pizza covered with pepperoni)/(Area of pizza)*100 ?

12. If each piece of pepperoni shrinks 25% in diameter while baking, what is the Coverage of pepperoni on the pizza after its baked?

13. If you cut a circle out of your pizza, with a 5" diameter, (a) how much Area of your pizza did you cut out? (b) What % of your original pizza is now missing?

ANSWERS

LEVEL 1

1. Pi Pizza Chef made 10 pizzas for a birthday party. 4 are cheese pizzas, 2 are sausage pizzas, 3 are pepperoni pizzas and 1 is a vegetable pizza.
   - Of which type of pizza did Pi Pizza Chef make the fewest? Answer: vegetable pizza
   - Of which type of pizza did Pi Pizza Chef make the most? Answer: cheese pizza
   - Did Pi Pizza Chef make more or fewer vegetable pizzas than pepperoni pizzas? Answer: fewer
   - How many more cheese pizzas did Pi Pizza Chef make than sausage pizzas? Answer: 2

2. If you made a pizza with 10 slices and you, your parent and dog each ate 1 piece, how many slices would be left?
   Answer: 10 - 3 = 7 slices

3. If you made a cheese pizza with 8 slices, but your brother snuck pepperoni on 5 slices, how many = cheese-only slices would you have left?
   Answer: 8 - 5 = 3 slices

4. You, your parent and your brother want pepperoni pizza for dinner. Your parent wants 2 pepperoni slices. Your brother wants 1 pepperoni slice and you want 4 pepperoni slices. How many total slices of pepperoni pizza does your family want?
   Answer: 2 + 1 + 4 = 7 slices

5. If you have 4 people in your house and each person wants to eat 2 slices of pizza for dinner, how many slices of pizza do you need in total?
   Answer: 4 * 2 = 8 slices

LEVEL 2

1. If you have 30 pepperoni for your pizza, and you give half to a family member, how many pepperoni do you have left?
   Answer: 30/2=15

2. If you give an equal number of pepperoni to 6 of your friends, how many pepperoni would each of your friends have? If you gave an equal number of pepperoni to 10 of your friends, how many pieces would each friend have?
   Answer: 30/6=5, 30/10=3

3. If each pizza costs $10, and you need 8 pizzas for a birthday party, how much will that cost (before tax)?
   Answer: 10 * 8 = $80; Bonus: (80*.11) + 80 = $88.80

4. If your pizza cost $10, and you split the cost evenly between yourself and your parent, how much would each of you have to pay?
   Answer: 10/2 = $5

5. How many quarters would you have to pay for your half of the pizza?
   Answer: 4*5 = 20

6. How many pennies would you have to spend to pay for your half of the pizza?
Answer: 100*5 = 500

7. If you ate half of your 8 pizza slices, put the other half in the refrigerator, then find out the next day that your parent ate half of your leftovers, how many slices of pizza do you have left? What % of your original pizza is left?
Answer: 8/2=4, 4/2=2, 2/8*100=25%

LEVEL 3

1. If your pizza is .5 inches (1/2 of an inch) tall after you bake it, and you stack 8 slices of pizza on top of each other, how tall is your stack of pizza slices? If you give 4 of those slices to your parent, how tall is your stack of pizza slices?
Answer: 8*.5=4" tall, 4/2=2" tall

2. If your Pi dough ball is rolled into a circle with a 12" diameter (d), what is the Area of your pizza?, where Area=πr^2 ? (Hint: r=3.14 or 22/7 and d=2r)
Answer: 113.1 square inches

3. Your pizza box is a square with sides of approximately 13". What is the area of the pizza box where the pizza sits (the base)?
Answer: 13x13=169 square inches

4. What % of the pizza box "base" is not covered with pizza after you set your 12" pizza in it?
Answer: 169-113 = approximately 56 square inches

5. If your pizza costs $10, what is the cost per square inch of the pizza? (Hint: 10/A (calculated above)
Answer: 10/113.1 = approximately .088 or nearly 9 cents per square inch

6. If you cut your pizza into 8 equal slices, what is the Area of each slice?
Answer: 113.1/8=14.1375 square inches.

7. If you spread cheese evenly across the pizza, and leave .5" (1/2 of one inch) of edge around the entire dough without cheese (as we do at Pi), (a) what is the Area of the pizza with cheese? (b) What is the Area of the pizza without cheese? (c) What percentage of the pizza Area DOES have cheese? (d) What % does NOT have cheese?
Answer: 12 - (.5 *2) = 11" diameter of cheese Coverage
(a) 11 * $2\pi r$ = approximately 95 square inches
(b) 113.1 - 95 = approximately 18 square inches
(c) 95 / 113.1 *100 = 90% Coverage
(d) 100% - 90% = 10% non-Coverage

8. What is the circumference of your 12" pizza, if Circumference=$2\pi r$?
Answer: Diameter = 12 inch
Radius(r) = 1/2 × 12 = 6
Circumference = $2\pi r$ or 2 × 3.14 × 6 = approximately 38 inches

9. Pi pepperoni are approximately 1.75″ in diameter (d). What is the Area of a Pi pepperoni piece, where r=radius, radius=.5d, and Area=πr^2 ?
Answer: A=πr^2, d=2r
Solving for A:
A=$(1/4)\pi d^2$ = $(1/4)\pi 1.75^2$ = 2.41 square inches

10. If your 30 pepperoni are spread across your pizza, with none of the pepperonis overlapping, how much Area of your pizza is covered with Pepperoni?
Answer: 2.41 * 30 = 72 square inches

11. What % of your pizza is covered with pepperoni, where:
Coverage=(Area of pizza covered with pepperoni)/(Area of pizza)*100?
Answer: 72 / 113.1 (area of your 12″ pizza) * 100 = 64%

12. If each piece of pepperoni shrinks 25% in diameter while baking, what is the Coverage of pepperoni on the pizza after its baked?
Answer: 2.41 * (1-.25) = approximately 1.81 square inches per pepperoni
1.81 * 30 = approximately 54 square inches of Coverage
54 / 113.1 *100 = approximately 48% Coverage

13. If you cut a circle out of your pizza, with a 5″ diameter, (a) how much Area of your pizza did you cut out? (b) What % of your original pizza is now missing?
Answer: Diameter of circle cut out = 5 * $2\pi r$ = approximately 19.6 square inches
19.6 / 113.1 *100 = approximately 17.3%

For some additional and more challenging geometry problems and concepts, please visit:

https://owlcation.com/stem/How-to-Calculate-the-Arc-Length-of-a-Circle-Segment-and-Sector-Area

https://www.khanacademy.org/math/geometry-home/cc-geometry-circles

https://www.mathsisfun.com/geometry/circle.html

https://www.mathsisfun.com/numbers/pi.html

Find the pizza toppings in the letters below

Popular Pizza Toppings

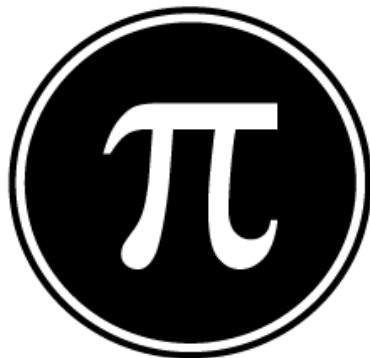| L	C	T	O	E	I	S	S	C	U	T	S	N	S
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SPINACH
CILANTRO
BEEF
ZUCCHINI
SAUSAGE
SALAMI
AVOCADO
LOBSTER
BACON
EGGPLANT
ONIONS
MUSHROOMS
CHICKEN
PEANUTS
RICOTA
PROSCUITTO

Play this puzzle online at : http://thewordsearch.com/puzzle/153/

Complete the sentences below with your imagination

PIZZA PIZZA

Pizza was invented by a _____ _____
                          (adjective)   (nationality)

chef named _____. To make a pizza, you need
              (person)

to take a lump of _____, and make a thin, round
                     (noun)

_____ _____. Then you cover it with
   (adjective)   (noun)

_____ sauce, _____ cheese, and fresh
   (adjective)   (adjective)

chopped _____. Next you have to bake it in a very
            (plural noun)

hot _____. When it is done, cut it into _____
        (noun)   (number)

_____. Some kids like _____ pizza the
   (shapes)   (food)

best, but my favorite is the _____ pizza. If I could, I
                                 (food)

would eat pizza _____ times a day!
                   (number)

π PIZZERIA
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