Pizza Time   Name:_____

You are going to share pizza with a group of friends. If the group orders a number of medium pizzas, then you will get 4 slices. If the group orders a number of large pizzas, you will get 3 slices. Which is the better deal for you?
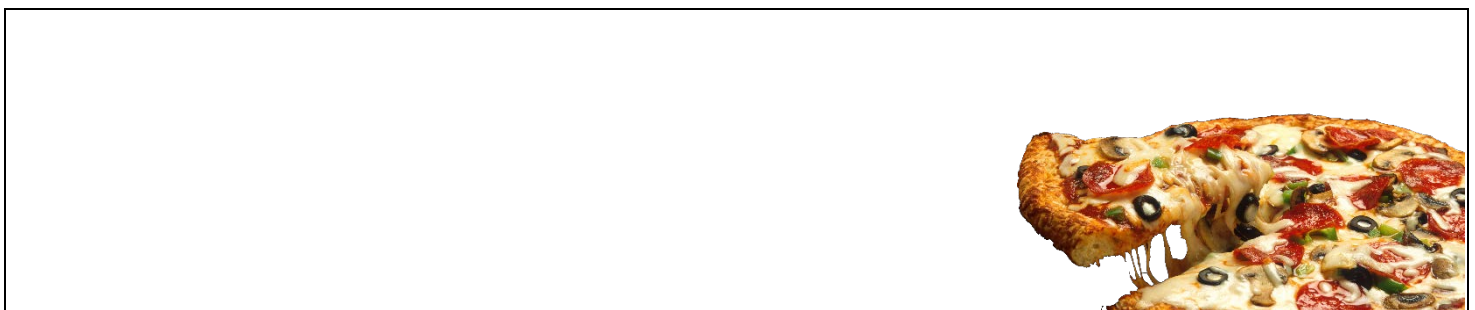
What do you need to know to solve this problem? (Write out your questions)

Questions	Answers

Now solve the problem in the space below.

Solution: Medium or Large

How?

Now let's say that you really like stuffed crust pizza. You are not concerned with which option gets you more pizza, but you want more of that tasty cheese filled crust. Which option will get your more crust?

What do you need to know to solve this problem?

Questions	Answers

Solution Space

Solution: Medium or Large

How?

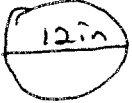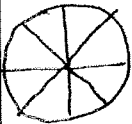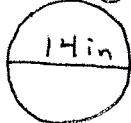**Pizza Time**   Name:_____

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Pizza Hut

What do you need to know to solve this problem?
(Write out your questions)

Questions	Answers
How big are the pizzas? ──────→	→ Medium 12 in diameter
How many slices in each pizza?	Large 14 in diameter
How to figure out how to find	↳ 8 Slices per pizza each
the area of a circle?	↳ Area = $\pi(radius)^2$

Now solve the problem in the space below.

Medium

 (circle labeled 12in) radius = 6 in

Area = $\pi 6^2 = 36\pi \approx 113.1$ in^2

8 Slices per pizza

(circle divided into 8) $\frac{360}{8} = 45°$

Area of 1 Slice = $\frac{45}{360} \cdot 36\pi$
$= \frac{1}{8} \cdot 36\pi$
$= \frac{36\pi}{8} = 9\pi/2$ in$^2 \approx 14.1$ in^2

4 Slices = $14.1 \cdot 4 \approx 56.4$ in^2

Large

(circle labeled 14in) radius = 7 in
Area = $\pi 7^2 = 49\pi \approx 153.9$ in

8 Slices Per Pizza
(circle divided into 8) $\frac{360}{8} = 45°$

Area of 1 Slice = $\frac{45}{360} \cdot 49\pi$
$= \frac{1}{8} \cdot 49\pi$
$= \frac{49\pi}{8} \approx 19.2$ in^2
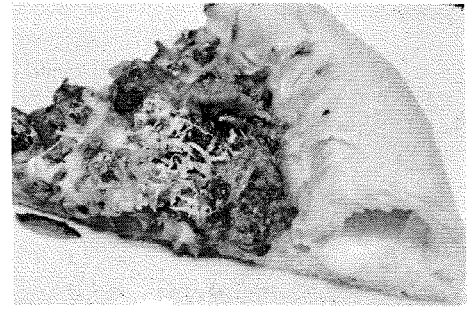
3 Slices = $19.2 \cdot 3 \approx 57.6$ in^2

Solution: Medium or (Large)

How?

The 3 slices of large pizza gives you 57.6 in^2 of pizza. The 4 slices of medium gives you 56.4 in^2. Even though the medium has more slices, the large's slices are bigger individually.

Now let's say that you really like stuffed crust pizza. You are not concerned with which option gets you more pizza, but you want more of that tasty cheese filled crust. Which option will get your more crust?

What do you need to know to solve this problem?

Questions	Answers
How big? How many slices? How to get the amount of crust in one pizza?	Medium 12 in diameter Large 14 in diameter 8 Slices per pizza → Use Circumference $C = \pi d = 2\pi r$

Solution Space

Medium
$d = 12$ in
$r = 6$ in

Circumference $= 2\pi r = \pi d$
$= 2\pi(6) = \pi(12)$
$= 12\pi \approx 57.7$ in

Length of 4 slices

$180°$ Length $= \frac{180}{360} \cdot C$
$= \frac{1}{2} \cdot 12\pi$
$= 6\pi \approx 18.8$ in

Large
$d = 14$ in
$r = 7$ in

Circumference $= 2\pi r = \pi d$
$= 2\pi(7) = \pi(14)$
$= 14\pi \approx 44.0$ in

Length of 3 Slices

$135°$ Length $= \frac{135}{360} \cdot C$
$= \frac{3}{8} \cdot 14\pi$
$= \frac{42\pi}{8} \approx 16.5$ in

Solution: Medium or Large

How?

The length of crust would be more with the medium slices. The large pizza has a greater circumference for the whole pizzas, but having more slices of the medium gives more crust.