1. Philip, his wife Sharon, and their son Greg are planning to paint a greenhouse together. Philip can paint the greenhouse alone in four hours; Sharon can paint it alone in four and a half hours; Greg can paint it alone in three and a half hours. If they start at noon and don't stop, when, to the nearest minute, will they finish painting the greenhouse?

select

1:27 PM

select

1:35 PM

select

1:42 PM

select

1:08 PM

select

1:19 PM

2. A shoe factory has two pieces of equipment to package the shoes: A and B.

A is a better performer and makes 35 packages an hour while B produces only 15 packages an hour.

The company has an order to ship 250 shoes. How many hours will it take for the factory to complete the packages necessary to ship the order?
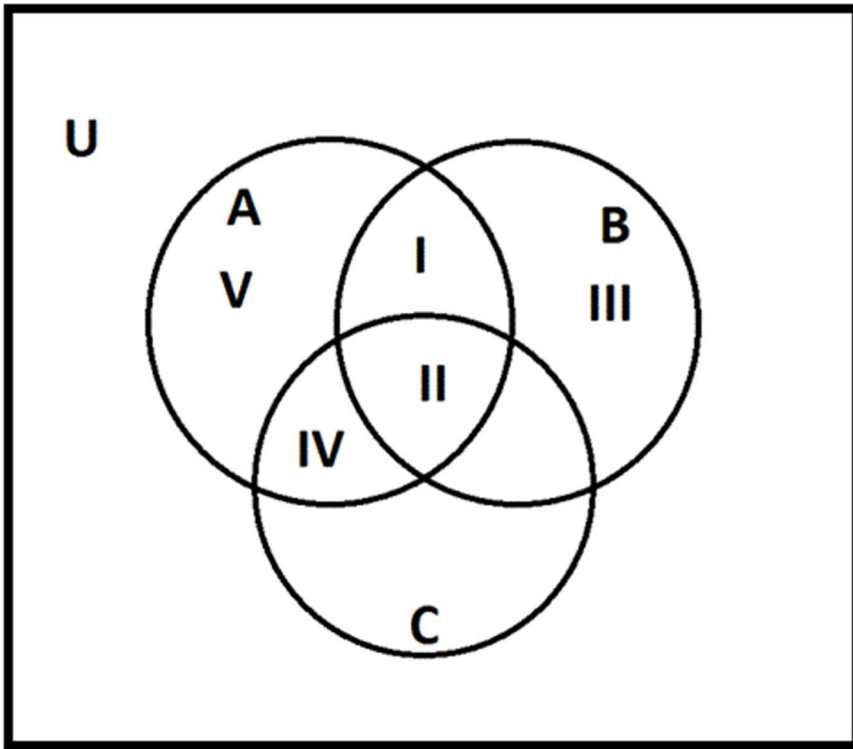
select

8 hours

select

2.5 hours

select

5 hours

select

4.25 hours

select

7.5 hours

3. The above represents a Venn diagram. The universal set U is the set of all positive integers. Let A be the set of all multiples of 3; let B be the set of all multiples of 5; let C be the set of all multiples of 7. Which of the five marked regions would include the number 525?

select

IV

select

I

select

III

select

II

select

V

4. Tom runs a 100m race in a certain amount of time. If John runs the same race, he takes 2 seconds longer. If John ran at 8m/s, approximately how fast did Tom run?

select
11m/s

select
10m/s

select
10.5m/s

select
9m/s

select
9.5m/s

5. Kenny and Marie, a married couple, work in the same building.
One morning, both left at 9:00, but in different cars. Kenny arrived at 10:10; Marie arrived 10 minutes later. If Kenny's average speed was 6 miles per hour faster than Marie's, how far is their work place from their home (nearest whole mile)?

select
60 mi

select
56 mi

select
58 mi

select
64 mi

select
62 mi

6. It costs $15,000 a month to operate Acme Widgets, Inc, plus $0.25 for every widgets produced. Each widget sells for $0.35. If gross profit is measured by the total dollar amount of sales minus operating and production costs, how many widgets would Acme Widgets, Inc. have to sell to make a profit of $25,000?

select
375,000

select

600,000

select

25,000

select

400,000

select

550,000

7. The profit equation for a certain manufacturing process is $P(x)=500x-10,000$, where x is the number of units.
How much money will the plant make/lose if it sells 100 units?

select

$-10,000$

select

40,000

select

50,000

select

$-40,000$

8. True or false: $N<7$
Statement 1: $|N|<7$
Statement 2: $N_2<49$

select

BOTH statements TOGETHER are insufficient to answer the question.

select

BOTH statements TOGETHER are sufficient to answer the question, but NEITHER statement ALONE is sufficient to answer the question.

select

Statement 1 ALONE is sufficient to answer the question, but Statement 2 ALONE is NOT sufficient to answer the question.

select

EITHER statement ALONE is sufficient to answer the question.

select

9. **What is the value of $2x + 2y$?**
   Statement 1: $x - 3y = 4$
   Statement 2: $x + y = 4$

| select | EACH statement ALONE is sufficient. |

| select | Statement 1 ALONE is sufficient, but statement 2 is not sufficient. |

| select | BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient. |

| select | Statements 1 and 2 TOGETHER are NOT sufficient. |

| select | Statement 2 ALONE is sufficient, but statement 1 is not sufficient. |

10. **x is a positive integer**
    True or false?
    $$(x - 2)(x - 4)(x - 6) = 0$$
    Statement 1: $x < 8$
    Statement 2: x is even.

| select | BOTH statements TOGETHER are insufficient to answer the question. |

| select | Statement 2 ALONE is sufficient to answer the question, but Statement 1 ALONE is NOT sufficient to answer the question. |

| select | BOTH statements TOGETHER are sufficient to answer the question, but NEITHER statement ALONE is sufficient to answer the question. |

| select | Statement 1 ALONE is sufficient to answer the question, but Statement 2 ALONE is NOT sufficient to answer the question. |

| select | EITHER statement ALONE is sufficient to answer the question. |

11. Is $x^2 < x$?
   (1) $0 < x < 1$
   (2) $x > 0$

select   C: BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient

select   B: Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient

select   E: Statements (1) and (2) TOGETHER are not sufficient

select   A: Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient

select   D: EACH statement ALONE is sufficient

12. Define $f(x) = 4x - 9$.
   Evaluate $(f \circ g)(9)$.
   Statement 1: $g(9) = 8$
   Statement 2: $g(12) = 9$

select   BOTH statements TOGETHER are sufficient to answer the question, but NEITHER statement ALONE is sufficient to answer the question.

select   Statement 2 ALONE is sufficient to answer the question, but Statement 1 ALONE is NOT sufficient to answer the question.

select   Statement 1 ALONE is sufficient to answer the question, but Statement 2 ALONE is NOT sufficient to answer the question.

select   EITHER statement ALONE is sufficient to answer the question.

select   BOTH statements TOGETHER are insufficient to answer the question.

13. This relation has five different ordered pairs: is it a function?

x	y
1	A
2	A
3	A
B	$A+1$
5	$A+2$

Statement 1: $A = 3$
Statement 2: $B = 5$

select — Statement 2 ALONE is sufficient to answer the question, but Statement 1 ALONE is NOT sufficient to answer the question.

select — EITHER statement ALONE is sufficient to answer the question.

select — Statement 1 ALONE is sufficient to answer the question, but Statement 2 ALONE is NOT sufficient to answer the question.

select — BOTH statements TOGETHER are insufficient to answer the question.

select — BOTH statements TOGETHER are sufficient to answer the question, but NEITHER statement ALONE is sufficient to answer the question.

14. The chord of a $60°$ central angle of a circle with circumference 90π has what length?

select — $45\sqrt{2}$

select — $45\sqrt{3}$

select — 90

select — 45

select — $90\sqrt{2}$

15. The chord of a $90°$ central angle of a circle with area 50π has what length?

select 5

select $5\sqrt{3}$

select $10\sqrt{2}$

select $5\sqrt{2}$

select 10

16. What is the domain of $y = -2\sqrt{x}$?

select $x > 0$

select $x < -2$

select $x \leq 0$

select $x = 0$

select $x \geq 0$

16. What is t

select x

select x

select x

select x

select x