

QUESTIONNAIRE Mathematics Test 7. Population 3a

QUESTION 1

The expression  $|x - 1| = 1$  implies that

- A. x is between 0 and 2
- B. x is either 0 or 2
- C. x is less than 2
- D. x is 0
- E. x is 2

QUESTION 2

When  $(1 + p)^6$  is expanded, the coefficient of  $p^4$  is

- A. 6
- B. 10
- C. 15
- D. 20
- E. 30

QUESTION 3

What is the converse of the statement, "If two angles are vertically opposite, then they are equal" ?

- A. If two angles are vertically opposite, then they are not equal.
- B. If two angles are equal, then they are vertically opposite.
- C. If  $\hat{A}x$  and  $\hat{A}y$  are vertically opposite angles, then  $\hat{A}x = \hat{A}y$ .
- D. If two angles are not vertically opposite, then they are not equal.
- E. If two angles are not equal, then they are not vertically opposite.

QUESTION 4

Suppose you have proved the two theorems:

- I. If p then q.
- II. If s then not q.

Which of the following theorems is implied by theorems I and II ?

- A. If p then s.
- B. If not p then not q.
- C. If p or q then s.
- D. If s then not p.
- E. If not s then q.

QUESTION 5

A train travelled a certain distance at a constant speed. Had the speed been 8 m.p.h. greater, the trip would have taken one hour less. Had the speed been 12 m.p.h. less the trip would have taken two hours more.

How many miles did the train go?

---

QUESTION 6

A wholesale merchant bought a television set at a certain price and then sold it to a retail merchant at an increase of  $P$  per cent. of this price. The retail merchant sold the set to a consumer for  $P$  per cent. more than he paid for it. If the customer paid 65 per cent. more than the price originally paid by the wholesale merchant, then  $P$  satisfies the equation:

A.  $1 + \frac{2P}{100} = 1.65$

D.  $1 + P\hat{y} = 1.65$

B.  $(1 + \frac{P}{100} \hat{y}) = 1.65$

C.  $1 + (\frac{P}{100}) \hat{y} = 1.65$

E.  $1 + 2P = 1.65$

QUESTION 7

If a relation  $R$  is such that  $xRy$  and  $yRz$  implies  $xRz$  for each  $x, y,$  and  $z$  of a given set, the relation  $R$  is said to be transitive on that set. Which of the following relations are transitive?

- I. "is father of"
- II. "is contemporary of"
- III. "is admirer of"
- IV. "is multiple of"
- V. "is perpendicular to"

- A. II, IV and V
- B. I and II
- C. II, III and IV

- D. II and IV
- E. V only

QUESTION 8

In the figure shown to the right, which vector is a graphical representation of the complex number  $4 - 2i$ ?

[ Picture ]

---

QUESTION 9

Solve  $0 < x\hat{y} - 3x + 3 < 7$

---



