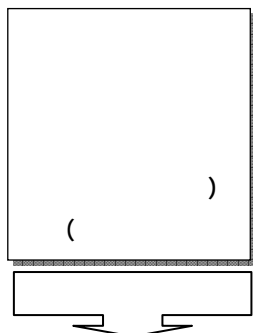


40



$$17 \quad 34 \times 23850 + 51 \times 4923 + 136 \times 256 + 85$$

-1

$$(4 \quad 5(3 \quad 8(2 \quad 10(1$$

$$x^{\sqrt{2x}} \quad \sqrt{x^x} = 4^3 \times 2^6 \quad -2$$

$$x^x (2 \quad \sqrt{x^x} (1$$

$$\sqrt{x}^{\sqrt{x}} (4 \quad x^{\sqrt{x}} (3$$

19 -3

$$10(4 \quad 9(3 \quad 5(2 \quad 4(1$$

$$A \quad A = \frac{2}{30} + \frac{2}{42} + \frac{2}{56} + \dots + \frac{2}{110} \quad -4$$

$$\frac{1}{12} (2 \quad \frac{1}{11} (1$$

$$\frac{1}{55} (4 \quad \frac{12}{55} (3$$

$$a. \quad \frac{1}{10} \quad B = \frac{1}{a} + \frac{1}{a^2} + \frac{1}{a^3} + \dots \quad -5$$

$$27(4 \quad 11(3 \quad 10(2 \quad 9(1$$

-6

$$-5\frac{1}{3} = -5 + \frac{1}{3} (\quad 7\frac{3}{4} = 7 + \frac{3}{4} ($$

$$\sqrt{75} - \sqrt{27} + \sqrt{12} (\quad \sqrt{361} ($$

$$2(2 \quad 1(1$$

$$4(4 \quad 3(3$$

$$x+y+z \quad \frac{1}{x} + \frac{1}{y} + \frac{1}{z} = \frac{13}{24}, \frac{x}{3} = \frac{y}{2} = \frac{z}{4} \quad -7$$

$$17(4 \quad 19(3 \quad 18(2 \quad 20(1$$

$$a = \frac{1}{2} \quad \frac{a+1}{a-1} \quad x \quad \frac{x+1}{x-1} \quad -8$$

$$\frac{1}{2} (4 \quad 1(3 \quad -3(2 \quad 3(1$$

12 3 -9

$$3(4 \quad 2(3 \quad 1(2 \quad \frac{1}{2} (1$$

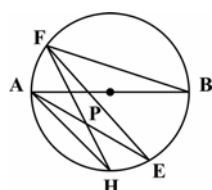
HPE

FBA = 20°

AH || EF

AB

-10

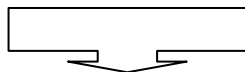


20^U(1

30^U(2

25^U(3

40^U(4



2

$$O = (-1, 2)$$

-11

$$A = (2, -2)$$

$$10(4)$$

$$7(3)$$

$$3(2)$$

$$5(1)$$

$$y + x = 8 \quad 2y = 2x - 1$$

d -12

$$3$$

$$7$$

d

$$y + x = -1(4)$$

$$y = 3x - 8(3)$$

$$x = 3(2)$$

$$2y = 2x + 8(1)$$

$$10$$

-13

$$37(4)$$

$$27(3)$$

$$33(2)$$

$$23(1)$$

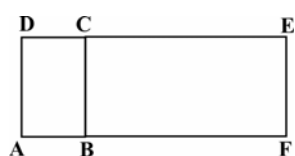
$$AD = 3 \quad AB = 1$$

$$BCEF \quad ABCD$$

-14

$$BCEF$$

$$ADEF$$



$$\frac{4}{3}(1)$$

$$\frac{9}{8}(2)$$

$$\frac{10}{9}(3)$$

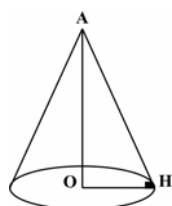
$$\frac{3}{2}(4)$$

O)

$$OA = 6$$

$$\angle OAH = 30^\circ$$

-15



(

$$12\pi(1)$$

$$24\pi(2)$$

$$27\pi(3)$$

$$9\sqrt{3}\pi(4)$$

-16

$$6\sqrt{3}(4)$$

$$6\sqrt{2}(3)$$

$$6(2)$$

$$3(1)$$

$$384$$

$$A$$

-17

$$A$$

$$16(4)$$

$$10(3)$$

$$9(2)$$

$$8(1)$$

$$A = \frac{12}{k+2}$$

$$A$$

$$k$$

-18

$$1(4)$$

$$6(3)$$

$$12(2)$$

$$10(1)$$

$$4$$

$$A$$

-19

$$A = 1 + 2 + 2^2 + 2^3 + \dots + 2^{1390}$$

$$697(4)$$

$$696(3)$$

$$694(2)$$

$$695(1)$$

x

$$AB = AD, \hat{B} - \hat{C} = 30^\circ$$

$$ABC$$

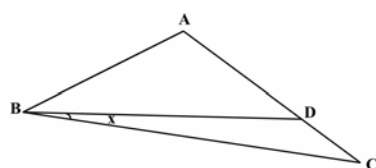
-20

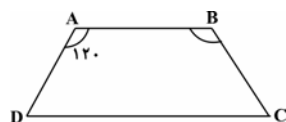
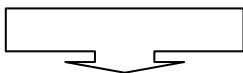
$$20^\circ(1)$$

$$15^\circ(2)$$

$$22/5^\circ(3)$$

$$25^\circ(4)$$





Δ
DMN

BC AB

$$AB = AD = 4 \quad \hat{B} = \frac{5}{4} \hat{A} \quad -21$$

24 (1)

32 (2)

$16\sqrt{3}$ (3)

$18\sqrt{3}$ (4)

N M ABCD -22

ABCD

$\frac{5}{8}$ (1)

$\frac{1}{4}$ (2)

$\frac{3}{5}$ (3)

$\frac{3}{8}$ (4)

4 -23

$\frac{1}{8}$ (4)

$\frac{1}{3}$ (3)

$\frac{1}{6}$ (2)

$\frac{1}{4}$ (1)

5 -24

100

625 (4)

620 (3)

615 (2)

605 (1)

x + y

(. .)

-25

	1	2	1	1	
x	y			3	U

6 (4)

36 (3)

14

21 (2)

15 (1)

-26

$\{2n \mid n \in \mathbb{N}, 100 < n < 400\}$

21 (2)

42 (4)

43 (1)

22 (3)

B A

B

A

4-27

$\frac{3}{5}$ (4)

$\frac{1}{2}$ (3)

$\frac{2}{5}$ (2)

$\frac{9}{10}$ (1)

20 -28



32cm

2^{20} (1)

2^{19} (2)

2^{21} (3)

$2^{21} - 1$ (4)

7 -29



196 (1)

576 (2)

784 (3)

392 (4)

3

4

9

8

-30

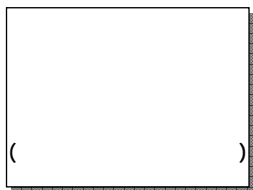
18 (4)

12 (3)

14 (2)

5
16 (1)

30



5

20

-31

()

(.)
50° 30° (4) 150° 130° (3)

50° (2)

130° (1)

1024 -32

9 (4)

10 (3)

11 (2)

8 (1)

(.) $R_2 R_1$

-33

$R_1 > R_2$ (1)

$R_1 < R_2$ (2)

$R_1 = R_2$ (3)

$\frac{R_1}{R_2} \leq 1$ (4)

-34

()

(1)

(2)

(3)

(4)

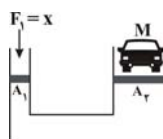


($g = 10 \text{ N/kg}$)

F_1

-35

($M = 1000 \text{ kg}$ $A_2 = 10 \text{ m}^2$ $A_1 = 10 \text{ cm}^2$)



10000 (1)

1000 (2)

100 (3)

1 (4)

-36

(1)

(2)

(3)

(4)

-37

(2)

(1)

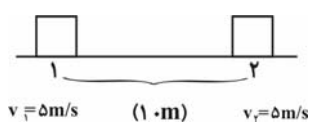
(1)

(2)

(3)

(4)

»-38



$v = \Delta m/s$

(1.m)

$v = \Delta m/s$

2

(2) (1)

75

(1)

(3)

100-39

(

)

(4

(3

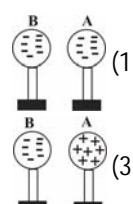
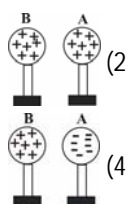
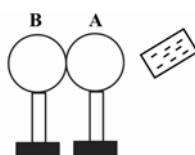
(2

(1

-40

A B

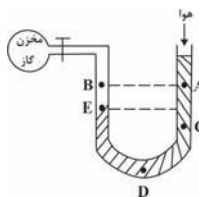
A



-41

- (2 4 (1
(4 (3

-42



- B A (1
B C (2
D (3
(4

30

60

-43

(. $^{25}\text{U}^{238}\text{C}$).

- (2 (1
— (4 (3

400

20m

1500N

-44

1/5m



- 60 (1
32 (2
24 (3
20 (4

%25

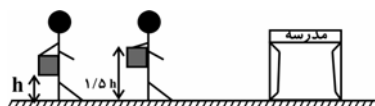
-45

- %80 (2 %80 (1
%20 (4 %20 (3

-46

(w₂ w₁)

- w₂ = 0/5 w₁ (1
w₂ = 1/5 w₁ (2
w₁ = 1/5 w₂ (3
w₁ = w₂ = U (4



10Hz

20 $\frac{\text{m}}{\text{s}}$

-47

- 0/2 (4 2 (3 20 (2 200 (1

A⁺

-48

- B⁻ (4 AB⁺ (3 O⁺ (2 A⁻ (1

-49

(.)

- Cu₂O (2 Cu₂S (1
Cu₂S, CuO (4 CuO (3

B

72 $\frac{\text{km}}{\text{h}}$

A

108 $\frac{\text{km}}{\text{h}}$

-50

15km

- 1/2 × 10³ (2 1/5 × 10³ (1
2/0 × 10² (4 3/0 × 10² (3

()

-51

(1
(2
(3
(4

-52

(1
(2
(3

« » (4

-53

(4 (3 (2 (1

-54

(1
(2
(3
(4

-55

(1
(2
(3
(4

-56

«
(1
(2
(3
(4

-57

«
(1
(3

-58

(1
(2
(3
(4

-59

(1
(2
(3
(4

-60

(1
(2
(3
(4

5

()

-61

:«. » (1

:« » (2

:«. » (3

:«. » (4

-62

«. _____ »

(2 _____ (1

(4 _____ (3

« » -63

(2 _____ (1

(4 _____ (3

-64

«. »

(2 _____ (1

(4 _____ (3

-65

(2 _____ (1

(4 _____ (3

« » -66

(2 _____ (1

(4 _____ (3

-67

« » : (2 « » : (1

« » : (4 « » : (3

-68

— — (2 — — (1

— — (4 — — (3

()

69-What . . . when your friend called?

- | | |
|------------------|-------------------|
| 1) are you doing | 2) do you do |
| 3) is he doing | 4) were you doing |

70-You are very You should rest.

- | | |
|--------------|-----------|
| 1) difficult | 2) tired |
| 3) ready | 4) hungry |

71-When did Jane . . . his homework?

- | | |
|---------|----------|
| 1) does | 2) doing |
| 3) do | 4) did |

72-There is . . . glass of milk on the table.

- | | |
|-------------|---------|
| 1) some | 2) much |
| 3) a little | 4) a |

73-A: . . . does he drive the car?**B: He drives it carefully.**

- | | |
|--------|----------|
| 1) Why | 2) When |
| 3) How | 4) Where |

74-A: Is he cleaning the house?**B: No, he . . . it tomorrow.**

- | | |
|------------|---------------|
| 1) cleans | 2) will clean |
| 3) cleaned | 4) cleaning |

75-Let's . . . lunch in a restaurant today.

- | | |
|-----------|--------|
| 1) have | 2) has |
| 3) having | 4) had |

Reading Comprehension:

Amir is a student. He is fifteen years old. He's short and thin and has black eyes. He reads many books. He likes them very much. Yesterday he went to a bookstore. Many people were buying books there. Amir talked to a few people about some books. He bought three good books. He took a taxi because it was late. He got home at 9:30.

76-How old is Amir?

- | | |
|-----------------------------|------------------------------|
| 1) He got home at 9:30. | 2) He likes books very much. |
| 3) He is fifteen years old. | 4) He is a student. |

77-How many books did Amir buy in the bookstore?

- | | |
|------------|----------|
| 1) nine | 2) three |
| 3) fifteen | 4) two |

78-Amir is . . . and . . . and has black

- | | |
|-----------------------|-----------------------|
| 1) thin- short- eyes | 2) short- tired- eyes |
| 3) short- tired-hairs | 4) thin- short- hairs |

10	
()	

()	:	()
--------------------------	---	--------------------------

-79

(2	(1
(4	(3

-80

(1
(2
(3
(4

-81

(2	(1
(4	(3

20

100

-82

$\frac{1}{500}$ (2	$\frac{1}{100}$ (1
$\frac{1}{2000}$ (4	$\frac{1}{250}$ (3

-83

(2	(1
(4	(3

-84

(2	(1
(4	(3

-85

.
- (2	- (1
- (4	- (3

-86

- - (2	- - (1
- - (4	- - (3

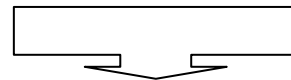
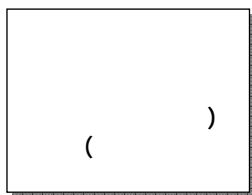
-87

(2	(1
(4	(3

-88

(2	(1
(4	(3

10



-89

«.

»

(2

(1

(4

(3

« »

-90

(2

(1

(4

(3

()

-91

(2

(1

(4

(3

.

... ...

-92

10 (2

10 (1

13 (4

13 (3

-93

(1

(2

(3

(4

-94

(2

(1

(4

(3

-95

(2

(1

- (4

(3

()

-96

(2

()

(1

()

(4

(3

«.

»

-97

(2

(1

(4

(3

() _____

() -98


- (2

- (1

- (4

- (3

	5	
()		

	
()	

-99

(2

(1

(4

(3

« » -100

« »

(1

(2

« »

(3

« »

(4

-101

(1

(2

(3

(4

-102

(1

(2

(3

(4

-103

(2

(1

(4

(3



2:



() () (70%) «4» -1

$$\begin{aligned} 34 &= 17 \times 2 \Rightarrow & 17 \quad 34 \times 23850 &\Rightarrow . & 17 \\ 51 &= 17 \times 3 \Rightarrow & 17 \quad 51 \times 4923 &\Rightarrow . & 17 \\ 136 &= 17 \times 8 \Rightarrow & 17 \quad 136 \times 256 &\Rightarrow . & 17 \\ 85 &= 17 \times 5 \Rightarrow & 17 \quad 85 &\Rightarrow . & 17 \end{aligned}$$

() () (50%) «1» -2

$$\begin{aligned} \sqrt{x^x} &= 4^3 \times 2^6 = 2^6 \times 2^6 = 2^{12} \Rightarrow x^x = 2^{24} \Rightarrow x^x = (2^3)^8 \Rightarrow x = 8 \\ x^{\sqrt{2x}} &= 8^{\sqrt{2 \times 8}} = 8^{\sqrt{16}} = 8^4 = 2^{12} = \sqrt{x^x} \end{aligned}$$

() () (60%) «4» -3

$$\begin{aligned} &: \\ . \quad 2 \quad 1 &\Leftarrow \\ . \quad 4 \quad 3 &\Leftarrow 2 \\ . \quad 6 \quad 5 &\Leftarrow 3 \\ . \quad 8 \quad 7 &\Leftarrow 4 \\ . \quad 20 \quad 19 &\Leftarrow 10 \\ . \quad 10 &19 \end{aligned}$$

() () (65%) «3» -4

$$\begin{aligned} A &= 2\left(\frac{1}{30} + \frac{1}{42} + \frac{1}{56} + \dots + \frac{1}{110}\right) \\ A &= 2\left(\frac{1}{5 \times 6} + \frac{1}{6 \times 7} + \frac{1}{7 \times 8} + \dots + \frac{1}{10 \times 11}\right) \\ A &= 2\left(\frac{1}{5} - \frac{1}{6} + \frac{1}{6} - \frac{1}{7} + \frac{1}{7} - \frac{1}{8} + \dots + \frac{1}{10} - \frac{1}{11}\right) \\ A &= 2\left(\frac{1}{5} - \frac{1}{11}\right) \\ A &= 2\left(\frac{11-5}{55}\right) = 2\left(\frac{6}{55}\right) = \frac{12}{55} \end{aligned}$$

() () (45%) «3» -5

$$\begin{aligned} B &= \frac{1}{a} + \frac{1}{a^2} + \dots \\ a \times B &= 1 + \frac{1}{a} + \frac{1}{a^2} + \dots \Rightarrow aB = 1 + B \Rightarrow B = \frac{1}{a-1} = \frac{1}{10} \Rightarrow a = 11 \end{aligned}$$



3 :

() () (50%) «2» -6

$$\begin{aligned} 7\frac{3}{4} &= \frac{28+3}{4} = \frac{31}{4} \\ \text{« } \rangle : 7 + \frac{3}{4} &= \frac{28}{4} + \frac{3}{4} = \frac{31}{4} \Rightarrow \frac{31}{4} = \frac{31}{4} . \quad \text{« } \rangle \end{aligned}$$

$$\begin{aligned} -5\frac{1}{3} &= \frac{-16}{3} \\ \text{« } \rangle : -5 + \frac{1}{3} &= \frac{-15}{3} + \frac{1}{3} = -\frac{14}{3} \Rightarrow \frac{-16}{3} \neq -\frac{14}{3} . \quad \text{« } \rangle \end{aligned}$$

$$\text{« } \rangle : \sqrt{361} = 19 \in \mathbb{Q} . \quad \text{« } \rangle$$

$$\text{« } \rangle : \sqrt{75} - \sqrt{27} + \sqrt{12} = 5\sqrt{3} - 3\sqrt{3} + 2\sqrt{3} = 4\sqrt{3} \Rightarrow (4\sqrt{3})^2 = 48 \in \mathbb{Z} . \quad \text{« } \rangle$$

. 2 4

() () (30%) «2» -7

: k

$$\begin{aligned} \frac{x}{3} &= \frac{k}{1} \Rightarrow x = 3k \\ \frac{x}{3} = \frac{y}{2} = \frac{z}{4} = \frac{k}{1} &\Rightarrow \frac{y}{2} = \frac{k}{1} \Rightarrow y = 2k \\ \frac{z}{4} &= k \Rightarrow z = 4k \\ \frac{1}{x} + \frac{1}{y} + \frac{1}{z} &= \frac{13}{24} \Rightarrow \frac{1}{3k} + \frac{1}{2k} + \frac{1}{4k} = \frac{13}{24} \Rightarrow \frac{1}{k} \left(\frac{1}{3} + \frac{1}{2} + \frac{1}{4} \right) = \frac{13}{24} \Rightarrow \frac{1}{k} \times \frac{4+6+3}{12} = \frac{13}{24} \\ &\Rightarrow \frac{1}{k} \times \frac{13}{12} = \frac{13}{24} \Rightarrow \frac{1}{k} = \frac{1}{2} \Rightarrow k = 2 \\ x + y + z &= 3k + 2k + 4k = 9k = 9 \times 2 = 18 \end{aligned}$$

() () (50%) «4» -8

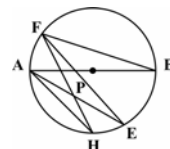
$$\frac{x+1}{x-1} = \frac{\frac{a+1}{a-1} + \frac{1}{a-1}}{\frac{a+1}{a-1} - \frac{1}{a-1}} = \frac{\frac{a+1+a-1}{a-1}}{\frac{a+1-a+1}{a-1}} = \frac{2a}{2} = a = \frac{1}{2}$$

() () (45%) «1» -9

$$\begin{aligned} (x+3)^2 &= x^2 + 12 \\ x^2 + 6x + 9 &= x^2 + 12 \\ 6x &= 3 \\ x &= \frac{1}{2} \end{aligned}$$

() () (40%) «4» -10

$$\widehat{HPE} = (\widehat{PEF} + \widehat{PFE}) = (\widehat{AEF} + \widehat{FHA}) = (20^\circ + 20^\circ) = 40^\circ$$





4 :

()

() (30%)

«4»

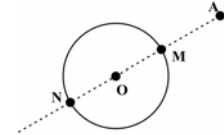
-11

).

(N M, O, A

$$AO = \sqrt{(2+1)^2 + (-2-2)^2} = 5 \Rightarrow AM = AO - OM = 5 - 2 = 3 \Rightarrow AM + AN = 3 + 7 = 10$$

$$MO = R = 2 \quad AN = AO + ON = 5 + 2 = 7$$



()

() (25%)

«2»

-12

$$2y = 2x - 1 \Rightarrow y = x - \frac{1}{2}$$

$$y + x = 8 \Rightarrow y = -x + 8$$

3

7

x

y

-45°

45°

$$y = 7 \quad x = 3$$

()

() (40%)

«1»

-13

:y

:x

$$x = y + 10 \Rightarrow 2y = y + 10 \Rightarrow y = 10 \Rightarrow x = 2y = 20$$

$$x = 2y$$

13

23

()

() (45%)

«3»

-14

$$ABCD \sim BCEF \Rightarrow \frac{AB}{BC} = \frac{AD}{CE} \Rightarrow \frac{1}{3} = \frac{3}{CE} \Rightarrow CE = 9 \Rightarrow DE = 9 + 1 = 10$$

$$\frac{S_{ADEF}}{S_{BCEF}} = \frac{3 \times 10}{3 \times 9} = \frac{10}{9}$$

()

() (40%)

«2»

-15

$$= \frac{1}{3} \times \quad \times$$

$$\frac{\sqrt{3}}{2} \times AH = 6 \Rightarrow AH = \frac{6 \times 2}{\sqrt{3}} = \frac{12\sqrt{3}}{3} = 4\sqrt{3} \Rightarrow OH = 2\sqrt{3} \Rightarrow$$

$$= \frac{1}{3} \times (\pi \times (2\sqrt{3})^2 \times 6) = 2 \times 12\pi = 24\pi$$



5:

() (70%) «2» -16

$$\frac{4}{3}\pi R^3 = 4\pi R^2 \Rightarrow 4 \times \frac{1}{3} \times \pi \times R^3 = 4 \times \pi \times R^2$$

$$\Rightarrow \frac{1}{3}R = 1 \Rightarrow \frac{R}{3} = 1 \Rightarrow R = 3 \Rightarrow = 2 \times 3 = 6$$

() (60%) «2» -17

: n A

$$2^n = 2^{n-2} + 384$$

$$2^n - 2^{n-2} = 384$$

$$2^n - 2^n + 2^2 = 384$$

$$2^n - \frac{2^n}{4} = 384$$

$$2^n - \frac{1}{4}(2^n) = 384$$

$$\frac{3}{4}(2^n) = 384$$

$$2^n = 384 \times \frac{4}{3} = 128 \times 4 = 512 = 2^9 \Rightarrow n = 9$$

9 9 A

() (40%) «2» -18

12 12 k + 2

$$k + 2 = \{\pm 1, \pm 2, \pm 3, \pm 4, \pm 6, \pm 12\}$$

12 k

() (15%) «3» -19

1391 A

$$A = (111 \dots 1)_2$$

: 1392 2 A 4 2

$$A = (111 \dots 1)_2$$

696 1392

: A :

$$A = 2^{1391} - 1$$

$$A = 1 + 2 + \dots + 2^{1390} + 1 - 1$$

$$A = 1 + 1 + 2 + \dots + 2^{1390} - 1$$

$$A = 2 + 2 + 2^2 + \dots + 2^{1390} - 1$$

$$A = 2^2 + 2^2 + 2^3 + \dots + 2^{1390} - 1 \Rightarrow A = 2^{1391} - 1 \Rightarrow A = 4^{695} \times 2 - 1$$

696

696

4

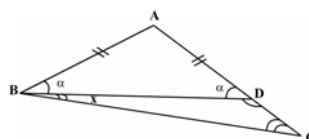
4^{695}

() (40%) «2» -20

: DBC

α

DBC : $\alpha = x + c$



$$\hat{B} - \hat{C} = 30^\circ \Rightarrow (\alpha + x) - c = 30^\circ \quad \alpha = x + c \rightarrow (x + c + x) - c = 30^\circ \Rightarrow 2x = 30^\circ \Rightarrow x = 15^\circ$$



6:

()

() (35%)

«3»

-21

$$\hat{B} = \frac{5}{4} \times 120^U = 150^U$$

$$DH = \frac{1}{2} AD = \frac{1}{2} \times 4 = 2$$

$$HH' = 4$$

$$AH^2 = AD^2 - DH^2 = 16 - 4 = 12$$

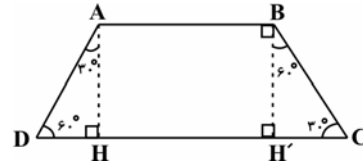
$$AH = \sqrt{12} = 2\sqrt{3} = BH'$$

$$BH' = \frac{1}{2} BC \Rightarrow BC = 2BH'$$

$$BC = 2 \times 2\sqrt{3} = 4\sqrt{3}$$

$$H'C^2 = BC^2 - BH'^2 = (4\sqrt{3})^2 - (2\sqrt{3})^2 = 48 - 12 = 36 \Rightarrow H'C = 6 \Rightarrow DC = DH + HH' + H'C = 2 + 4 + 6 = 12$$

$$S = \frac{2\sqrt{3} \times (4+12)}{2} = \frac{2\sqrt{3} \times 16}{2} = 16\sqrt{3}$$



()

() (30%)

«4»

-22

$$S_1 = \frac{1}{2} \times 1 \times 2 = 1$$

$$S_2 = \frac{1}{2} \times 1 \times 1 = \frac{1}{2}$$

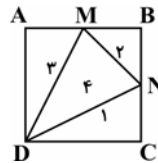
$$S_3 = \frac{1}{2} \times 1 \times 2 = 1$$

$$S = 2 \times 2 = 4$$

$$S_4 = S - (S_1 + S_2 + S_3) = 4 - (1 + 0.5 + 1)$$

$$S_4 = 4 - 2.5 = 1.5$$

$$\frac{S_4}{S} = \frac{1.5}{4} = \frac{3}{8}$$



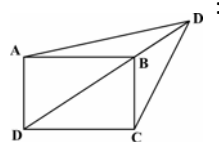
()

() (30%)

«3»

-23

$$V = \frac{1}{3} \times a^2 \times a = \frac{1}{3} a^3$$



(BD)

(ABCD)

$\frac{1}{3}$

()

() (45%)

«2»

-24

$$\frac{(a-2)(a-1)a(a+1)(a+2)}{5a} = 100k \rightarrow (a-2)(a-1)a(a+1)(a+2) = 500ka = 5^3 \times 2^2 ka$$

$$a = 123 \Rightarrow 5a = 615$$

$$125 \quad a+2$$

()

() (55%)

«3»

-25

	1	2	1	1	
x=21	y=15	6	3	3	U
15	12	3	3		

$$x + y = 15 + 21 = 36$$



7:

() () (50%) «1» -26

$$7 \quad 7 \times 15 = 105 \quad 400 \quad 100$$

$$7 \quad n \quad 14 \quad 2n$$

$$7 \times 57 = 399 \quad 400 \quad 100$$

$$7 \quad \frac{399-105}{7} + 1 = 43$$

() () (30%) «1» -27

$$2x \quad A$$

$$B \quad x \quad A \quad 8x \quad B$$

$$10x \quad 9x \quad B \quad x \quad A$$

$$B \quad \frac{9}{10}$$

$$B = \frac{9x}{10x} = \frac{9}{10}$$

() () (20%) «2» -28



1	1
2	2
3	4
4	8
5	16
n	2^{n-1}

$$2^{19} \quad 20$$

() () (30%) «1» -29

$$\frac{a}{7}$$

$$a$$

$$2(a + \frac{a}{7})$$

$$2(a + \frac{a}{7}) = 32 \Rightarrow \frac{8}{7}a = 16 \Rightarrow a = 14$$

() () (35%) «1» -30

$$4 \quad 4 \quad 5$$

$$4 \quad 3$$

$$= 3 + 4 + 4 + 4 + 1 = 16$$



8:

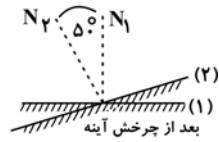
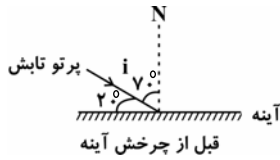


()

() (20%)

«3»

-31



$$90^\circ - 20^\circ = 70^\circ$$

$$70$$

$$5$$

$$5$$

$$70^\circ - 5^\circ = 65^\circ$$

$$\hat{i} + \hat{r} = 65^\circ + 65^\circ = 130^\circ$$

$$5$$

$$\hat{i} + \hat{r} = 75^\circ + 75^\circ = 150^\circ$$

$$70^\circ + 5^\circ = 75^\circ$$

()

() (20%)

«3»

-32

$$1024 \rightarrow 512 \rightarrow 256 \rightarrow 128 \rightarrow 64 \rightarrow 32 \rightarrow 16 \rightarrow 8 \rightarrow 4 \rightarrow 2 \rightarrow 1$$

$$1024 = 2^{10}$$

$$2$$

$$m = \frac{m_U}{2^n} \Rightarrow 1 = \frac{1024}{2^n} \Rightarrow 2^n = 1024 \Rightarrow 2^n = 2^{10} \Rightarrow n = 10 \Rightarrow \frac{t}{T} = 10 \Rightarrow \frac{t}{1} = 10 \Rightarrow t = 10$$

()

() (25%)

«1»

-33

$$R_1$$

$$R_2$$

$$R = \frac{V}{I}$$

()

() (40%)

«3»

-34

()

()

() (20%)

«4»

-35

$$P_1 = P_2 \Rightarrow \frac{F_1}{A_1} = \frac{F_2}{A_2} \Rightarrow \frac{F_1}{10 \times 10^{-4}} = \frac{1000 \times 10}{10} \Rightarrow F_1 = 10^3 \times 10^{-3} = 1(N)$$

()

() (35%)

«3»

-36

:

()

←

←

←

()

() (15%)

«2»

-37

()

()

()

() (45%)

«1»

-38

()

() (65%)

«1»

-39

(%70)

()

() (35%)

«3»

-40

A

B

B

A



9:

() () (50%) «4» -41

() () (25%) «1» -42

E B
A B A E

() () (25%) «1» -43

() () (50%) «4» -44

$$R = 400 \times 10 = 4000 \text{ N}$$

$$R_a = \frac{R \cdot d_R}{E \cdot d_E} \times 100$$

$$E = 1500 \text{ N}$$

$$R_a = \frac{4000 \times 1/5}{1500 \times 20} \times 10 \Rightarrow$$

$$d_E = 20 \text{ m}$$

$$d_R = 1/5 \text{ m}$$

$$R_a = ?$$

$$R_a = 20$$

() () (55%) «3» -45

$$\rho = \frac{m}{V}, \rho' = \frac{m}{V'} \Rightarrow \rho' = \frac{m}{V + 0/25V}$$

$$\frac{\rho'}{\rho} = \frac{\frac{m}{V + 0/25V}}{\frac{m}{V}} \Rightarrow \frac{\rho'}{\rho} = \frac{V}{1/25V} \Rightarrow \frac{\rho'}{\rho} = \frac{4}{5}$$

$$\frac{\rho'}{\rho} = \frac{80}{100} \quad 20\%$$

() () (40%) «4» -46

$$W_1 = W_2 = U$$

() () (65%) «3» -47

$$\lambda = \frac{V}{f} \Rightarrow \lambda = \frac{20}{10} \Rightarrow \lambda = 2 \text{ m}$$

() () (60%) «3» -48

Rh A A AB A

() () (25%) «2» -49

Cu CuO Cu Cu₂O

CuO 2 S Cu Cu₂S

() () (15%) «3» -50

$$V_A = 108 \frac{\text{km}}{\text{h}} = 30 \frac{\text{m}}{\text{s}}, \quad V_B = 72 \frac{\text{km}}{\text{h}} = 20 \frac{\text{m}}{\text{s}}$$

$$x = 15 \text{ km} = 15 \times 10^3 \text{ m}$$

$$V = V_A + V_B \Rightarrow V = 30 + 20 = 50 \frac{\text{m}}{\text{s}}$$

$$x = Vt \Rightarrow 15 \times 10^3 = 50t \Rightarrow t = 300 \text{ s}$$



- () (26 24 23 18) (65%) «3» -51
 . « » « » :«1»
 « » :«2»
 «3»
 « » :«4»
- () (55 54) (60%) «3» -52
 .
- () (25) (75%) «4» -53
 . _____
- () () (%60) «3» -54
 . « » « » « » « » :«1»
 . « » « » :«2»
 . « » :«4»
- () (39) (35%) «2» -55
 . «2» « »
- () (43 42) (65%) «3» -56
 :
- () () (75%) «4» -57
 « » :« » / « » :« » / « » :« »
- () (86) (55%) «4» -58
 « » . «4» « » .
- () (45) (45%) «1» -59
 . () « »
- () (80) (35%) «3» -60
 . _____ :



11:



- () (99 92 85 58)(70%) «1» -61
« : » « : »
:
« :«2»
«.» :«3»
«.» :«4»
- () (23)(75%) «2» -62
:
« : » « : » « : »
() (60)(70%) «3» -63
:
() (99 91)(70%) «1» -64
«1» «.» :
«.» :«1»
:
«.» :«2»
:«3»
«.» :«4»
- () (120 112 111)(75%) «4» -65
« » « » «.» » «.» »
«.» (3 «.» (2 «.» (1 :
() (136)(75%) «3» -66
:« » :« » :« »
() (21 20)(70%) «3» -67
« » « » « » « »
() (58 41)(78%) «3» -68
:



() (52)(40%) «4» -69

. «4»

+ when +

() (31)(65%) «2» -70

«. . _____ » :

(4 (3 (2 (1

() (47)(75%) «3» -71

() (26)(70%) «4» -72

a glass of milk.

() (61)(80%) «3» -73

« _____ » :A :

«. _____ » :B

(4 (3 (2 (1

() (72)(85%) «2» -74

"tomorrow"

() (70)(65%) «1» -75

"Let's"

() () (70%) «3» -76

« _____ » :

«. _____ »

() () (65%) «2» -77

« _____ » :

() () (85%) «1» -78

«. _____ » :



13 :

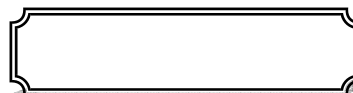


(_____ : _____)

(_____)	(_____ 93 92) (60%)	«3»	-79
(_____)	(_____ 36) (45%)	«2»	-80
(_____)	(_____ 25) (70%)	«2»	-81
(_____)	(_____ 11) (50%)	«2»	-82
$\frac{20}{100 \times 100} = \frac{1}{500}$			
(_____)	(_____ 32) (60%)	«2»	-83
(_____)	(_____ 54) (60%)	«3»	-84
(_____)	(_____ 65) (65%)	«4»	-85
(_____)	(_____ 22) (65%)	«1»	-86
(_____)	(_____ 61) (50%)	«2»	-87
(_____)	(_____ 30) (60%)	«3»	-88



14 :



() (26)(50%) «3» -89

» :

24

«.

() (42)(90%) «2» -90

()

() (36)(50%) «3» -91

()

() (31)(80%) «3» -92

13

() (37)(55%) «3» -93

() (31)(60%) «1» -94

() (71)(70%) «2» -95

() (79)(75%) «3» -96

« » : ()

()

() (86)(70%) «2» -97

15

«.

» :

«2»

() (88)(60%) «3» -98



15:



()

(88) (45%)

«3» -99

()

(109) (40%)

«2» -100

()

()

(133 132) (50%)

«4» -101

()

(149) (55%)

«3» -102

()

(187) (60%)

«1» -103