Test 2 section 3 (459)

1) E
2) A
3) E
4) E
5) B
6) A
7) E
8) E
9) D
10) D
11) A
12) D
13) E
14) D
15) C
16) C
17) A
18) A
19) A
20) E

Jul 12-9:37 AM

2) $2^{4x}=16$ $4x=4$ $x=1$

$2^{4x}=2^4$

3) $r-2$, $r+5$ $r+5-(r-2)$

$r+5-r+2$

7

4) E

5) $v3-03$ $03-v3$ $v2-v1-01-02$

$02-v1-01-v2$

6) $\frac{3}{7} \cdot n = 42$ $\Leftrightarrow$ $n = \frac{7}{3}42$

$\frac{1}{7}n = 14$ $n = 98$

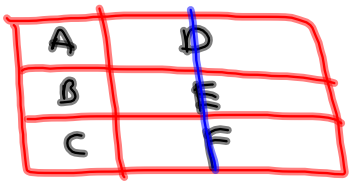
$\frac{5}{7}n = 70$ $\frac{5}{7}n = \frac{5}{7}98$

$\frac{5}{7}n = 70$

7) A = 1 part D = 2 parts

9 parts total F = 2 parts

$P(f) = \frac{2}{9}$ (E)



8) I $(a+1)b$ (ev) even

II $(a+1)+b$ (ev) odd

III $(a+1)-b$ (ev) odd

$2+3=5$

E

9)

1, 2	1
2, 3	2
3, 4	3
n, n+1	n

98, 99	98
99, 100	99
100, 101	100
	297

D

10) $f(2) = \frac{3-2(2^2)}{2}$

$= \frac{3-8}{2}$

$= -\frac{5}{2}$

(D)

11) A) $y < 90$ (A)

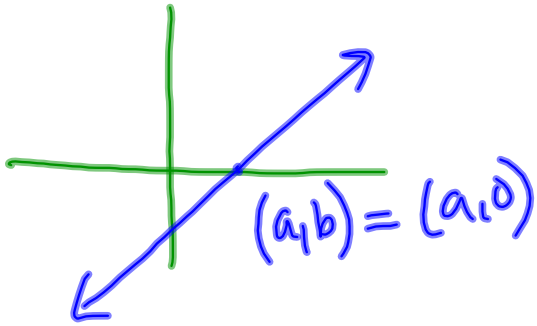
12) $y = 5x - 10$

$0 = 5a - 10$

$10 = 5a$

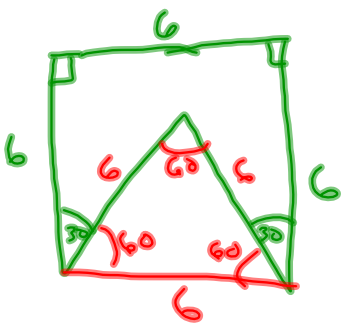
$2 = a$

(D)



13) 27 33 40 44 50 68

14)



P=30

15)

38

2·19

100

4·25

5·5

C

17) $a \uparrow b = \frac{a+b}{a-b}$

$1 \uparrow 2 = 2 \uparrow x$

$\frac{3}{-1} = \frac{2+x}{2-x}$

$3(2-x) = -2-x$

$6-3x = -2-x$

$6 = -2+2x$

$8 = 2x$

$x = 4$

(A)

$1 \uparrow 3 = \frac{4}{-2} = -2$

$3 \uparrow x = \frac{3+x}{3-x}$

$-2 = \frac{3+x}{3-x}$

$-6+2x = 3+x$

$x = 9$

$$a \uparrow b = \frac{a+b}{a-b}$$

$$a \uparrow b = b \uparrow x$$

$$\frac{a+b}{a-b} = \frac{b+x}{b-x}$$

$$(a+b)(b-x) = (a-b)(b+x)$$

$$ab - ax + b^2 - bx = ab + ax - b^2 - bx$$

$$2b^2 = 2ax$$

$$\frac{b^2}{a} = x$$

18) $x + (x-2) + (x-2) + \ldots$ ($n-1$ terms)

$x + (n-1)(x-2)$ (A)

19) $30^\circ = \frac{1}{12}$ circle (360)

$\text{circ} = 6\pi(12) = 72\pi = 2\pi r$

$36 = r$

$A = \pi r^2$

$A = \frac{\pi r^2}{12}$

$\frac{\pi(36)^2}{12}$

108π

(A)

20) men = n

women = $n+75$

$2n+75$

$\frac{n}{2n+75} \times 100$

(E)

Test 2 section 6 (471)

1) D
2) D
3) A
4) D
5) D
6) B
7) C
8) B
9) 1404
10) 57.5
11) 110
12) 9
13) 13,14,15,16,17
14) 5
15) 1/2 OR .5
16) 2,7
17) 149
18) 72

1) $\frac{3+\diamond}{2} = \frac{15}{2}$

$\diamond = 12$

(D)

3)

	E	U	total
men	29000		
women	21000	500	21,500
total	50000		50,500

(A)

5) $xr = v$ $v = kr$ (D)

$x\not{r} = k\not{r}$

6) $2w + 3b = 5n$ multiple of 5

(B)

7) $18\sqrt{18} = r\sqrt{t}$

$r > t$

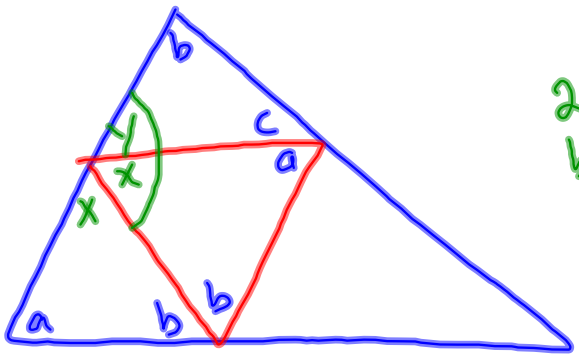
$18\sqrt{2}\sqrt{9}$

$18(\sqrt{2})3$

$54\sqrt{2}$

So: $r \cdot t = 108$ (C)

8)



C in terms of a, b

$2x + y = 180$

$b + C + y = 180$

$2x = b + C$

$180 = a + b + x$

$x = 180 - (a + b)$

$2(180 - (a + b)) = b + C$

$360 - 2a - 2b - b = C$

$360 - 2a - 3b = C$

(E)

9) $4 \times 351 = 1404$

10) avg = 57.5

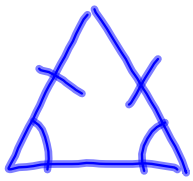
or dist between = 9

$\div 2 = 4.5$

$53 + 4.5 = 57.5$

11) Isosceles! 50, 30, 30 = 110

~~50, 50, 30~~



12) $x^2 - y^2 = 77$

$(x+y)(x-y) = 77$

$x+y \qquad 11$

$\Rightarrow$

$(x-y) = 7$

$x+y = 11$

$2x = 18$

$x = 9$

13) $\frac{360}{20} = 18$

$\frac{360}{30} = 12$

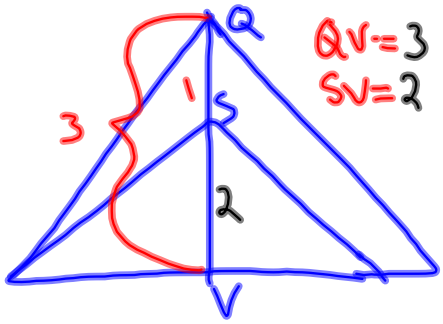
13, 14, 15, 16, 17

14) $a, 3a, 9a, 27a, 81a$

$121a = 605$

$a = 5$

15) $\frac{QS}{QV} = \frac{1}{3}$ $\frac{SV}{QV} = \frac{2}{3}$



$\frac{A\,PST}{A\,PQR} = \frac{\frac{1}{2} PT \cdot VS}{\frac{1}{2} PR \cdot QV} = \frac{3}{4}\,\frac{2}{3} = \frac{1}{2}$

16) $h(2m) = 14 + \frac{(2m)^2}{4} = 9m$

~~$2m^2$~~

$h(x) = 14 + \frac{x^2}{4}$

$14 + \frac{4m^2}{4} = 9m$

$m^2 - 9m + 14 = 0$

$(m-2)(m-7) = 0$

$m-2=0 \quad m-7=0$

$m=2 \quad m=7$

17) $10.8 + 5.8 + 3.1$

$10.2 + 3.2$

$80 + 40 + 3$
$20 + 6$ } $= 149$

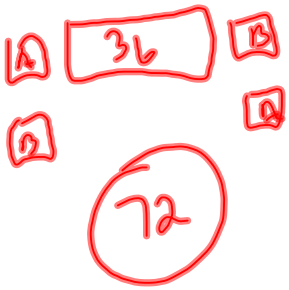
(8:00)

(7:30, 8:30)

18)

one must

36



72

Test 2 section 9 (487)

1) C
2) D
3) B
4) B
5) C
6) C
7) D
8) C
9) B
10) B
11) A
12) B
13) C
14) E
15) C
16) D

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2) A, B $m > 0$

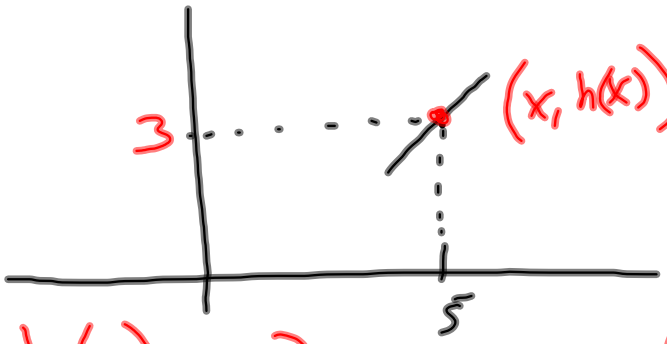
D $b > 0$ ✓

3) $\frac{\$1.89}{6} \approx .30$ (B)

4) $12 + 6 + 3(1)$

$3.59 \quad 1.89 \quad 1.20 = 6.68$ (B)

5)



$(x, h(x)) \Rightarrow (5, h(5))$

$(5, 3)$

$h(5) \approx 3$

C

6) $2x+3x+4x=360$

$9x=360$

$x=40$

C

7) $x^{-\frac{1}{2}} = \frac{1}{3}$

$\frac{1}{x^{\frac{1}{2}}} = \frac{1}{3}$

$\frac{1}{\sqrt{x}} = \frac{1}{3}$

$x = 9$

$y^2 = 16$

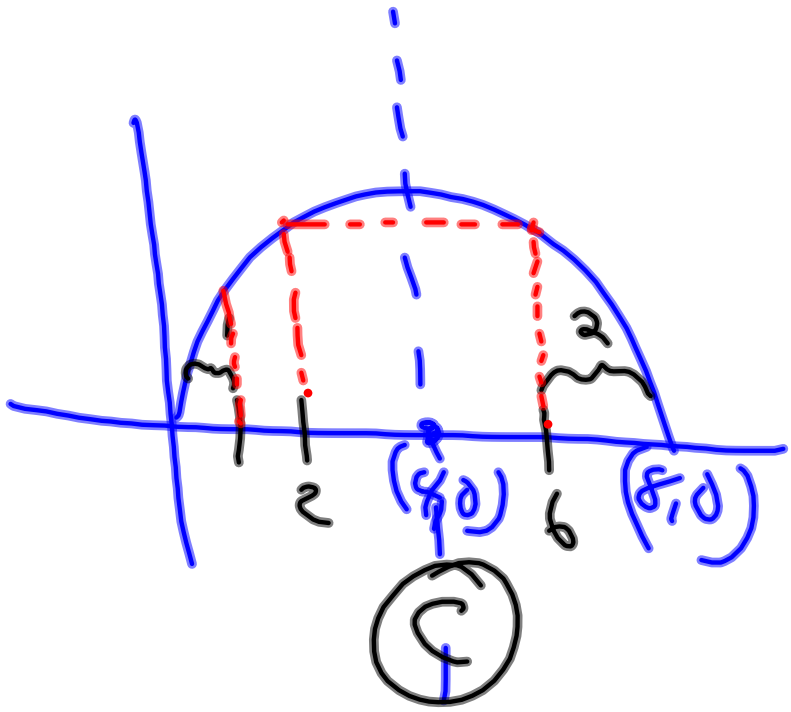
$16^1 = 16$ X

$4^2 = 16$ X

$2^4 = 16$ ✓ (D)

$x+2 = 9+4 = 13$

8)



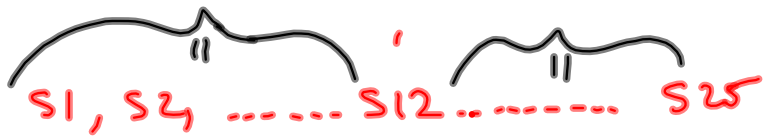
9) $\frac{2p+7}{5}$ gives Remainder 3

$2p+7$

A) $4+7=11$ X

B) $6+7=13$ ✓

C) $8+7=15$ X

10) 

(B)

11) $g(x) = ax^2 + bx + c$

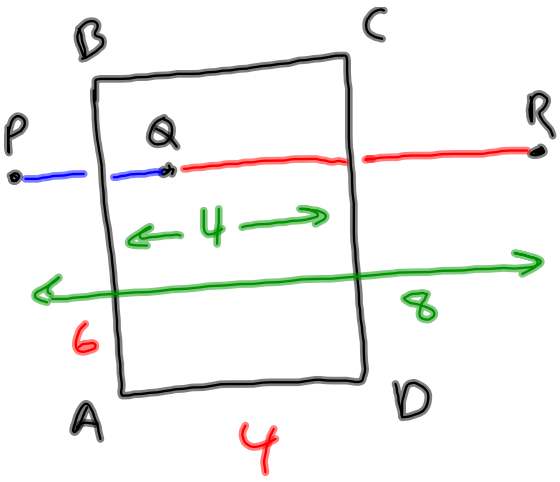
$g(0) = c$ D, B, C eliminated

$a = (-)$ concave down

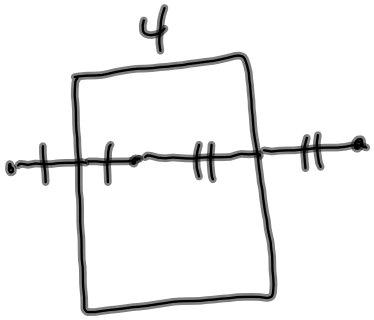
$\therefore$ (A)

$a(x-h)^2 + k$ "translation"

12)



B



13) $(1.10x).75$

decreased by 25%
means 75% remains

$.825x$ C

82.5%

OR

$1.10x - .25(1.10x)$

14)

$$\begin{array}{rr} 4w = & 4+w \\ -w & -w \\ \hline 3w = & 4 \end{array}$$

E

15)

$x, x+2, x+4$

$a^2+b^2=c^2$

$x^2+(x+2)^2=(x+4)^2$

C

16) $y = x + \frac{1}{x}$ $x > 1$, integer

1) $y \neq x$ ✓

2) y is int $2 + \frac{1}{2}$ x

3) $xy > x^2$ ✓

$x\left(y = x + \frac{1}{x}\right)$

$xy = x^2 + 1$

D