Test 6 section 3 (716)

1) D
2) B
3) A
4) C
5) D
6) C
7) B
8) A
9) 120
10) 6/25
11) 1,11
12) 39
13) 6500
14) 5/18
15) 2
16) 5
17) 11
18) 3/8

1) .2 → .25 (D)

2) $(0, \frac{1}{2})$ dist = $\frac{1}{2}$ (B)

c, d dist = $(\sqrt{2})(\frac{1}{2})$ so $> \frac{1}{2}$

3) $5x = 180$
$x = 36$

$2x + y = 180$
$y = 180 - 72 = 108$ (A)

4) $100 \times 65 = 6500 + 65 = 6565$ $x + 1 = 101$ (C)

5) $m^x \cdot m^7 = m^{28}$
$x + 7 = 28$
$x = 21$

$(m^5)^y = m^{15}$
$5 \cdot y = 15$
$y = 3$

(D)

6) (C)

7) $\triangle AEB = 45\text{-}45\text{-}90$ so $AB = \sqrt{2}\,BE$

$4 = \sqrt{2}\,BE$

$BE = \frac{4}{\sqrt{2}}$

$\triangle AEB \sim \triangle DCB$ (x2)

So $CB = 2 \times BE = \frac{8}{\sqrt{2}}$

So $CE = \frac{12}{\sqrt{2}} = \frac{12\sqrt{2}}{2} = 6\sqrt{2}$ (B)

side bar

$$\frac{7}{\sqrt{3}}\left(\frac{\sqrt{3}}{\sqrt{3}}\right) = \frac{7\sqrt{3}}{3}$$

$$4^2 = x^2 + x^2$$
$$4^2 = 2x^2$$
$$8 = x^2$$
$$\sqrt{8} = x \qquad \sqrt{8} = 2\sqrt{2}\,\frac{\sqrt{2}}{\sqrt{2}} = \frac{4}{\sqrt{2}}$$

$$\frac{12}{\sqrt{2}}\left(\frac{\sqrt{2}}{\sqrt{2}}\right) = \frac{12\sqrt{2}}{2}$$
$$= 6\sqrt{2}$$

8) $\frac{d}{8} = \frac{\$}{\text{ounce}}$ ie dollars per ounce

$\frac{d}{8} \div c = \frac{\$}{\text{cup}}$ $\frac{\text{dollars per ounce}}{\text{cups}}$

$\frac{d}{8c}$ (A)

8) $\frac{d}{8}$ = dollars for one ounce

c = cups for one once

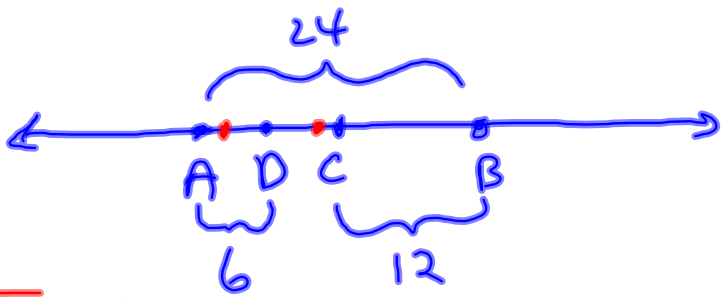
$$\frac{d \text{ dollars}}{8 \text{ ounces}} \cdot \frac{1 \text{ ounce}}{c \text{ cups}} = \frac{d \cdot 1}{8 \cdot c} \frac{\text{dollars}}{\text{cup}}$$

$\frac{d}{8c}$ (A)

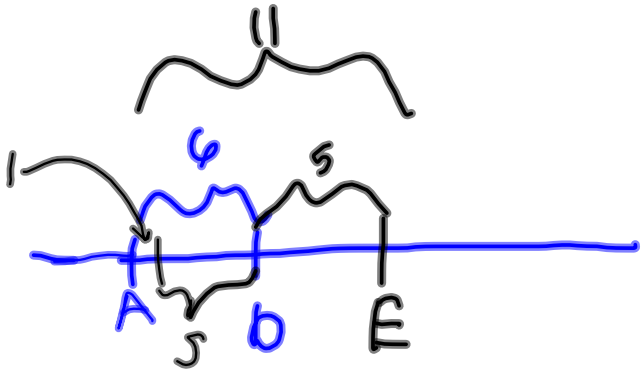
9) $\frac{10}{a} = \frac{b}{12} \Rightarrow 120 = ab$

10) $150, 30, 6, \frac{6}{5}, \frac{b}{25}$

11)



$\overline{AE} = 1,11$



11,1

12)

$$x+x+1+x+2+x+3+x+4=185$$

$$5x+10=185$$

$$5x=175$$

$$x=35$$

$$x+4=39$$

$$x-4+x-3+x-2+x-1+x=185$$

$$5x-10=185$$

$$5x=195$$

$$x=39$$

13) $p = 1200 + .2s = 2500$

$.2s = 1300$

$s = 6500$

14) $\frac{40}{360} = \frac{x}{2.5}$

$10 = 36x$

$x = \frac{10}{36} = \frac{5}{18}$

15) $x^2-y^2=10$

$(x+y)(x-y)=10$

$5(x-y)=10$

$(x-y)=2$

$(a^2-b^2)=(a+b)(a-b)$

$a^2-ab+ab-b^2$

$x^2-y^2=10$

$x+y=5$

$x=5-y$

$(5-y)^2-y^2=10$

$25-10y+y^2-y^2=10$

$25-10y=10$

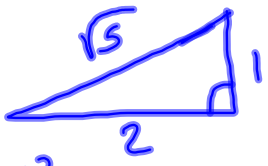
$-10y=-15$

$y=\frac{3}{2}$

$x=\frac{7}{2}$

$x-y=\frac{4}{2}$

16) inside = square so 4 Δ's are congruent
so outside is square so each Δ



$A = (\sqrt{5})^2 = 5$

$2^2 + 1^2 = c^2$

$5 = c^2$

~~$\sqrt{5} = c$~~

$\sqrt{5} = \sqrt{c^2}$

$\sqrt{5} = c$

$A = \sqrt{5}\sqrt{5}$

$= (\sqrt{5})^2$

$= 5$

17) $13 \boxed{R} K = 2$

$x \frac{13}{2} = 6 R1$

$x \frac{13}{3} = 4 R1$

$\frac{13}{11} = 1 R2$

(11)

J % K
modulus
"mod"

$J \boxed{R} K$

$\Rightarrow \frac{J}{K}$ and get Remainder

18) $\frac{x}{p}=70$ $\frac{y}{n}=92$ $\frac{x+y}{p+n}=86$

$\frac{70p+92n}{p+n}=86$

$70p+92n=86(p+n)$ ←

$\frac{70p}{n}+92=\frac{86p}{n}+86$

$92-86=(86-70)\frac{p}{n}$

$6=16\frac{p}{n}$

$\frac{3}{8}=\frac{p}{n}$

see solution on next page where you divide by n later in the calculations

$70p + 92n = 86(p+n)$

$70p + 92n = 86p + 86n$

$-86n \qquad -86n$

$70p + 6n = 86p$

$-70p \qquad -70p$

$6n = 16p$

$\frac{n}{}$

$6 = \frac{16p}{n} \Rightarrow \frac{6}{16} = \frac{p}{n}$

$\frac{3}{8}$

Test 6 section 7 (733)

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

Jul 12-9:37 AM

5) $900 = 20\%X$ $900 = .2x$ $x = 4500$ (E)

6) $4 \text{ yds} \times 6 \text{ yds} = 24 \text{ sq yds}$ (C)

7) $k+b=7$, $k+p=8$, $b+p=9$ $\rightarrow$ $7-b+p=8$

easier to try all answers (D)

$7-b+9-b=8$

$-2b=-8$

$b=4 \Rightarrow k=3, p=5$

8) $\frac{\frac{1}{4}}{16} = \frac{x}{40} \Rightarrow 10 = 16x$

$x = \frac{5}{8}$ (B)

9) $-p^2+9 = p^2-9$

$2p^2 = 18$

$p^2 = 9$ (A)

$p = 3, \cancel{-3}$

10) $\frac{300}{60} = 5$ bolts/min

$\frac{450}{60} = 7.5$ bolts/min

12.5 bolts/min

or $\frac{750}{60} = 12.5$ bpm

$(12.5)(x \text{ min}) = 900$

$x = \frac{900}{12.5} = 72$

only reasonable answer → (B)

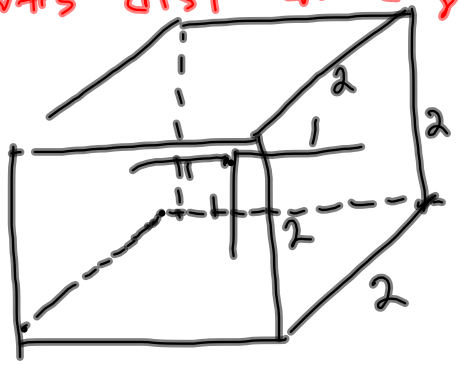
11) eliminate A b/c t coef is (+)
eliminate B, C $g(0) \neq 2$
trials (E)

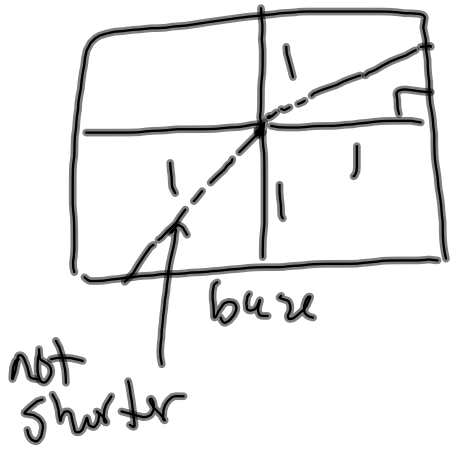
12) A x
B x
C ✓

13) 3x4 304, 314 ... 394 (A)

14) y-int must = -1 eliminate B, C, E
line must be steeper x3 (D)

15) cube is "regular" so 2×2×2
shortest dist to edge is ⊥ so 1 (A)





16) $y = \frac{5(2x)^3}{2z} = \frac{5 \cdot 8x^3}{2z} = \frac{8}{2}\left(\frac{5x^3}{z}\right)$ (E)

17) $3200 = 5000\left(\frac{4}{5}\right)^n$ (B)

$\frac{16}{25} = \left(\frac{4}{5}\right)^n \quad n = 2$

18) in 3 more steps A is back in place, but you need 1 more after that for B to get back to the middle

(D)

18 alt)

ABC	start
BAC	1
BCA	2
CBA	3
CAB	4
ACB	5
ABC	6

19) A $m = 2m$ X

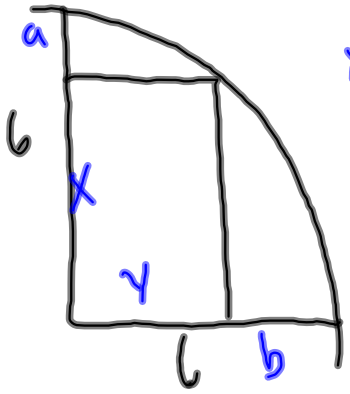
B $m = m + 10$ X

C smallest could move up past median X

D largest " " down " " X

(E) largest remains above median

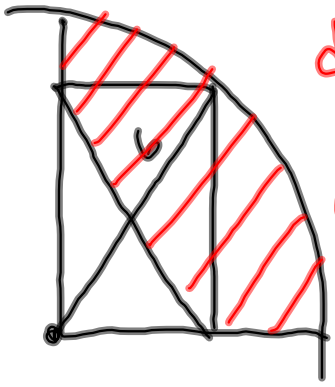
20) $\frac{1}{4}(2\pi r) = \frac{1}{2}\pi 6 = 3\pi$ elim D, E



$x + y = 8$

$6 + y = 12$

$a + b = 4$



diag = radius

$6 + 4 + 3\pi$

$10 + 3\pi$

(B)

Test 6 section 9 (743)

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

Aug 1-1:17 PM

3) $180 = 80 + 70 + z$ (A)

$30 = z$

4) $s + d = 35$

$s = s + d$

$s + d + d = 35$

$2d = 30$

$d = 15$ (C)

5) Red $\frac{30}{80}$

not Red $= \frac{50}{80}$ (B)

6) $\Delta e \sim \Delta t$

$\Delta e = k\Delta t$

$\frac{\Delta e}{\Delta t} = k \Rightarrow \left(\frac{24}{20} = \frac{x}{15}\right) \Rightarrow$ $24 \cdot 15 = 20x$

$\frac{24 \cdot 15}{20} = x$

$18 = x$

(B)

7) $u+v+w=180$ $\quad x+y=90$

$$\frac{(u+v+w)+(x+y)}{5} = \frac{180+90}{5} = \frac{270}{5} = 54$$ (E)

8) $x^2 < x \quad \therefore x < 1$

$x^3 < x^2 < x$ so $x \neq (-)$ (C)

9) $m = \frac{\text{rise}}{\text{run}} = \frac{k}{h}$ (to get to origin)

(from origin) $m = \frac{\text{rise}}{\text{run}} = \frac{3}{1}$ (A)

10) $m < 0$ $\quad m-3 < 0$

$|m-3| = 5 \Rightarrow -(m-3) = 5$

$-m+3 = 5$

$-m = 2$

$m = -2$

$|k+7| = 15$

$k+7 = 15$

~~$k = 8$~~

$-(k+7) = 15$

$-k-7 = 15$

$-k = 22$

$k = -22$

$m-k$

$-2+22$

20

(E)

11) twice, 3 times 8 (C)

12) $PA = \frac{1}{2} PB$, $PQ = \frac{1}{2} PR$ } Δ's are similar ratio $\frac{2}{4} = \frac{1}{2}$

$\frac{1}{2} = \frac{AQ}{BR}$

$\frac{1}{2} = \frac{4}{BR} \Rightarrow 8 = BR$

$4 + 2 + 8 + 3 = 17$ (E)

13) $g(5) = 25+5 = 30$

$h(4) = 16-4 = 12$

18 (D)

14) $h(m+1) = (m+1)^2 - (m+1)$

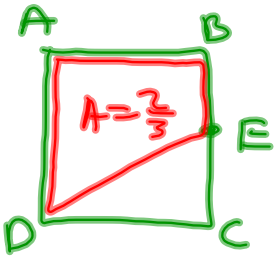
$m^2+2m+1-m-1$

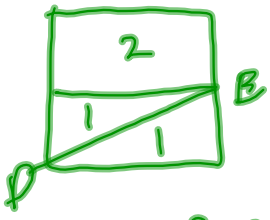
$m^2+m = g(m)$ (A)

15) $28 = 1.4\,cost \Rightarrow cost = \frac{28}{1.4} = 20$

$P = .7\,cost \Rightarrow P = .7(20) = \$14$ (B)

16)





(C)

$\frac{2}{3} = \frac{3}{4}A$ $A = \frac{4}{3} \cdot \frac{2}{3} = \frac{8}{9}$

(red Area is $\frac{3}{4}$ of whole A)