Test 7 section 2 (774)

1) A
2) C
3) C
4) B
5) Z
6) C
7) D
8) D
9) 2/3, .666, .667
10) 10/3, 3.33
11) 875
12) 2, 3
13) 36
14) 12
15) 5
16) 71
17) 10/7, 1.42, 1.43
18) 3

2) $d = r \cdot t$

$10 = r \cdot 2$

$\frac{10}{2} = \frac{r \cdot 2}{2}$

$5 = r$

$d = r \cdot t$

$20 = r \cdot 1$

$r = 20$

(C)

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

$x + 1 = k(k-2) + 1$

$= k^2 - 2k + 1$

(C)

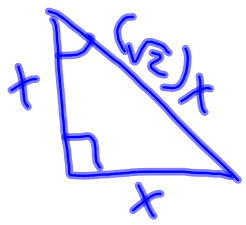
4) given graph $m=a$

$n=2a$ twice as steep (+)

b is 1

(B)

5)



$x^2+x^2=c^2$

$2x^2=c^2$

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

$\sqrt{2}\,x=c$

$x+x+\sqrt{2}x$

$2x+\sqrt{2}x$

$=4+2\sqrt{2}$

$x=2$ (A)

6) 100
95
95
95 Sam
90
90
90
90
85 ← #9 is median
80
80
80

(C)

7) $16s = x$ gal

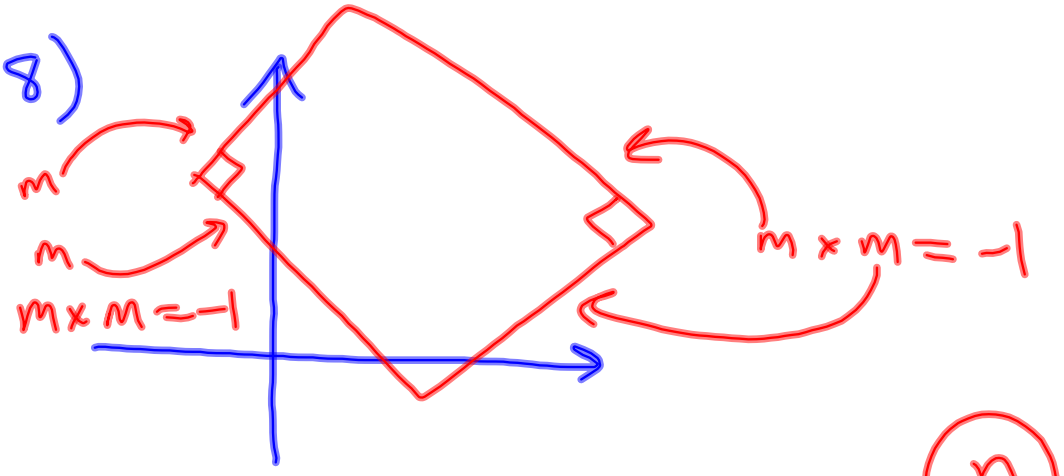
$8l = x$ cont

need "l"

$l = \frac{x}{8}$ D

Ignore extra information

8)



$-1 \times -1 = 1$

D

9) $\frac{20}{60}$ com. $\frac{40}{60} = \frac{4}{6} = \frac{2}{3}$ not

10) $0.3x = 1$

$x = \frac{1}{.3}$ $\frac{1}{\frac{3}{10}} = \frac{10}{3} = 3.\overline{3}$

$x = 3.\overline{3}$

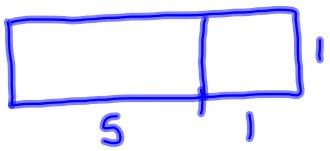
$x = \frac{10}{3}$

11) $x \overset{y}{\triangle} z = x^y - z^y$

$10 \overset{3}{\triangle} 5 = 10^3 - 5^3 = 1000 - 125 = 875$

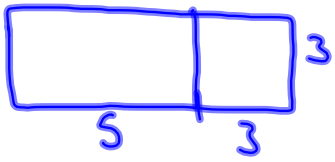
$x = 10$
$y = 3$
$z = 5$

12)



$A > 10, < 30$

$A = 6 \times 1$ X



$A = 8 \times 3 = 24$ ☺

3

$(5+x)x > 10$

$5x + x^2 - 10 > 0$

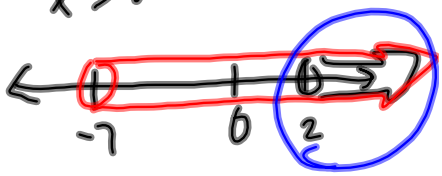
$x^2 + 5x - 10 > 0$

$x^2 + 5x - 14 > 0$

$(x-2)(x+7) > 0$

$x-2 > 0$ AND $x+7 > 0$

$x > 2$ $x > -7$



13) $r + g + b = x$

$\frac{1}{3}x + \frac{1}{2}\frac{1}{3}x + 18 = x$

$\frac{1}{3}x + \frac{1}{6}x + 18 = x$

$\frac{2}{6}x + \frac{1}{6}x - x = -18$

$\frac{3}{6}x - x = -18$

$-\frac{1}{2}x = -18$

$x = 36$

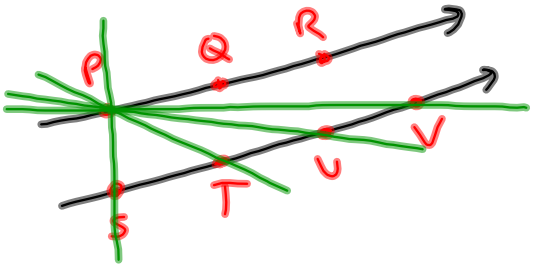
OR $\frac{1}{3} + \frac{1}{6} + 18$

$\frac{2}{6} + \frac{1}{6}$

$\frac{3}{6}$

$\frac{1}{2} \rightarrow 18$ $\therefore$ 36

14)



P → 4
Q → 4
R → 4

12

15) $2^x + 2^x + 2^x + 2^x = 2^7$

$4 \cdot 2^x = 2^7$

$2^2 \cdot 2^x = 2^7$

$2^{2+x} = 2^7$

$2+x=7$

$x=5$

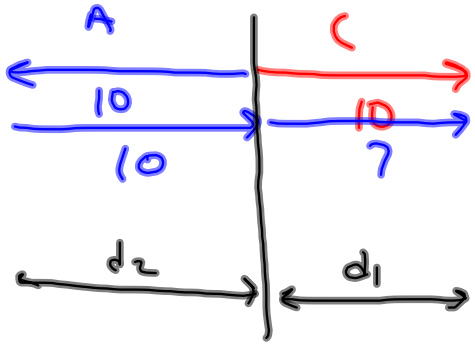
16) $\frac{1+1+1+1+x}{5} = 15$

$4+x=75$ ← sum

$x=71$

algebra sentence

17)



$d_1 \neq d_2$

$A = x\,C$

$\frac{A}{C} = x$

$\frac{7}{10} = x$

18) $f(x) = x^2 + 18$

$f(2m) = 2f(m)$

$(2m)^2 + 18 = 2(m^2 + 18)$

$4m^2 + 18 = 2m^2 + 36$

$2m^2 = 18$

$m^2 = 9$

$m = 3$

Jul 30-9:26 AM

Test 7 section 5 (791)

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

Jul 27-11:10 AM

2) $a(x+y)=45$

$ax=15$

$ax+ay=45$

$15+ay=45$

$ay=30$

E

3) $60-30$

$30/4$ spaces $= 7.5$ 37.5

B

4) 4:56 5:46 6:64
4:65 5:64 6:45

C

5) 3r+2t B

7) total 14p (E)

$$\frac{B_1+B_2+\ldots+B_{14}}{14}=p$$

8) $$\frac{y_2+y_1}{2}=y_m$$

$$\frac{5+-1}{2}=t$$

$$\frac{4}{2}=t$$

$$2=t$$

(C)

9) $k(2x+3)(x-1)=0$

$x>1$ so $2x+3>0$ $x-1>0$ (B)

$\therefore k=0$ principle of zero products

10)

11) $\text{Circ} = \pi = 2\pi r$

$1 \cdot \pi = 2\pi r$

$1 = 2r$

$r = \frac{1}{2}$

(B)

12) $y \sim x^2$

$y = kx^2$

$\frac{1}{8} = k\left(\frac{1}{2}\right)^2$

$\left(\frac{1}{8} = k\frac{1}{4}\right) \times 4 \Rightarrow \frac{1}{2} = k$

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

$\frac{9}{2} = \frac{1}{2}x^2$

$9 = x^2$

$x = 3$

(D)

$\frac{y}{x^2} = k$

$\frac{\frac{1}{8}}{\left(\frac{1}{2}\right)^2} = \frac{1}{2}$

$\frac{\frac{9}{2}}{x^2} = \frac{1}{2}$

$\frac{9}{2} = \frac{1}{2}x^2$ (3)

13) $4x = 7w$ (smaller)

$w < u < v < x$

(D)

14) $h(t) = 2(t^3 - 3)$

$h(t) = -60$

$2(t^3 - 3) = -60$

$t^3 - 3 = -30$

$t^3 = -27$

$t = -3$

$2 - 3t = 2 - 3(-3)$

$= 2 + 9$

$= 11$

(B)

15) $x = (a)(3)$

$y = (b)(5)$

I xy ✓

II $3x+5y$ ✗ both would need to be divisible by 15

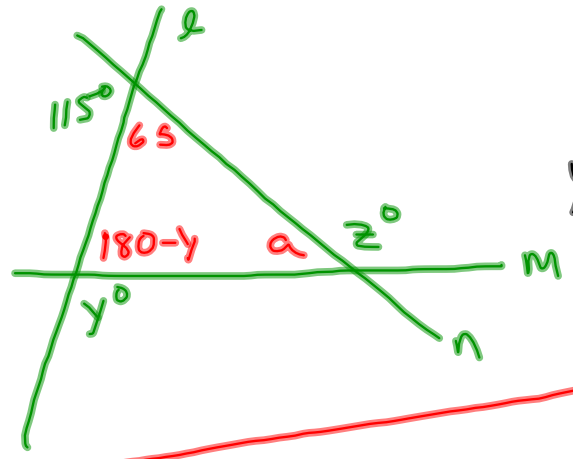
III $5x+3y$ ✓ each is divisible by 15

(D)

$45+60 = 105$

$105/15 = 7$

16)



$z = 65 + 180 - y$

$y + z = 245$

(E)

$z + a = 180$

$a + 65 + 180 - y = 180$

$a + 65 - y = 0$

$(180 - z) + 65 - y = 0$

$y + z = 245$

17) $x+(x+2)+(x+4)=111$

$3x+6=111$

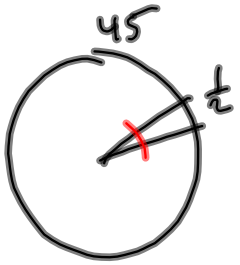
(D)

18) $18b+18\cdot 2=45$

$18b+36=45$

$18b=9$

$b=\frac{1}{2}$



$\frac{\frac{1}{2}}{45}=\frac{x}{360}$

$45x=180$

$x=4$

(A)

19) $C(n) = 300x^n$

increase of 10% means mult by 1.10

$300(1.1)(1.1)(1.1)$ 3 years

$300(1.1)^3$

$n = 1$ year

$\Rightarrow C(n) = 300(1.1)$

$= 330$

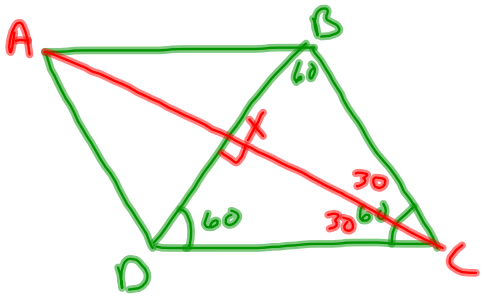
So

$330 = 300x^1$

$\frac{330}{300} = x$

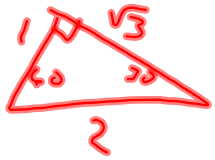
$1.1 = x$

20)



$$\frac{AC}{BD} = \frac{CX}{DX} = \frac{\sqrt{3}}{1}$$

(B)



Test 7 section 8 (803)

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

Jul 27-11:10 AM

4) $\frac{2}{5}$ apples mlt of 5 pieces of fruit

(C)

6) $x = -1$ $k > 0$

key

(+)

$x^2 = 1$

$x^3 = -1$

$x^4 = 1$

⋮

A neg x

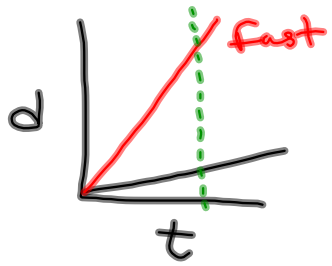
B 4k

C neg x

D 8k

E neg x

7)



$m = \frac{\Delta y}{\Delta x} = \frac{d}{t} = \text{speed}$

swim – cycle – run
slow fast

(E)

8) $(\sqrt{6}, k)$ $y = x^2 - 7$ $y = -x^2 + j$

$x^2 - 7 = -x^2 + j$

$2x^2 = j + 7$

$2(\sqrt{6})^2 = J + 7$ (A)

$12 = J + 7$

$5 = J$

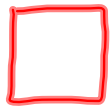
9) $|2-x| < 3$

$2-x < 3$ or $-(2-x) < 3$

$-x < 1$ $-2+x < 3$

$x > -1$ $+x < 5$

(A)

10)  $4 = 360$

$(4-2)(180)$

 $3 = 180$

$(3-2)(180)$

$(5-2)\,180 =$

$\frac{540}{5} = 108$

$180 - 108 = 72$ (C)

Jul 30-10:22 AM

11) $d = \frac{3}{8}T$

$6 = \frac{3}{8}T$

$\frac{8}{3} \cdot 6 = T$

$16 = T$

$\frac{3}{9} = \frac{6}{x}$

$3x = 48$

$x = 16$

(C)

12) $\frac{x+3}{2}$

A	$x=3$	X
B	$x=-9$	X
C	$x=11$	X
D	$x=11$	X
E	✓	

any even +3 = odd

$\frac{\text{odd}}{2}$ not int

13) $Q = (3, \frac{6}{2})$ $S = (11, \frac{10}{2})$

$(3, 3)$ $(11, 5)$

$\frac{\Delta y}{\Delta x} = \frac{5-3}{11-3} = \frac{2}{8} = \frac{1}{4}$ (B)

14) $n=1$ 4, 11
$n=2$ 5, 12
$n=3$ 6, 13
$n=4$ 7, 14
$n=11$ 14, 21

(B)

$\frac{n+3}{7}$ $\frac{n+10}{7}$

diff = 7

7, 14
14, 21
21, 28
⋮

15) D trap ... "closest" is "largest"

16) $(xy)(x-y) = 7 \cdot 5 = 35$

$= x^2y - xy^2$ ✓

(D)