

I have included the work in order to find the correct answers. My suggestion is to ~~work the problem~~
 Then look at the solution to see if you got the right answer. The last resort is to ~~copy my work~~
 you can receive your credit

1)

	5b	1
5b	25b ²	5b
-3	-15b	-3

 $-75b^2$
 $(5b+1)(5b-3)$ (B)

6) $-8+5i$ (B)
 7) $(-4-i)(2-7i)$ (B)
 $-8-2i+28i+7i^2$
 $-8+26i-7 = -15+26i$

2)

	4p	-5
7p	28p ²	-35p
-2	-8p	10

 $280p^2$
 $(4p-5)(7p-2)$ (D)

8) $\frac{3+5i}{2+3i} \cdot \frac{2-3i}{2-3i}$ (B)
 $\frac{6-9i+10i-15i^2}{4-9i^2} = \frac{6+i+15}{4+9}$
 $\frac{21+i}{13}$

3) $\sqrt{d+9} = d-3$ (B)
 $d+9 = d^2-6d+9$
 $0 = d^2-7d$
 $0 = d(d-7)$
 $d=0$ or $d=7$ ✓

9) graph \rightarrow minimum of 4 (D)

check $\sqrt{0+9} \neq 0-3$
 $\sqrt{7+9} = 7-3$
 $\sqrt{16} = 4$ ✓

10) $x^2-3x-4=0$ (A)
 $(x-4)(x+1)$
 $4, -1$

4) $\sqrt{-500}$ (D)
 $i\sqrt{100 \cdot 5} = 10i\sqrt{5}$

11) $2x^2+3x-2=0$ (D)
 $(2x-1)(x+2)=0$
 $x = \frac{1}{2}$ or $x = -2$

5) $x = \frac{-8 \pm \sqrt{64-4(1)(20)}}{2(1)}$
 $= \frac{-8 \pm \sqrt{-16}}{2}$
 $\frac{-8 \pm 4i}{2}$
 $-4 \pm 2i$ (D)

12) $x = \frac{-4 \pm \sqrt{16-4(3)(-15)}}{2(3)}$
 $= \frac{-4 \pm \sqrt{196}}{6}$
 $\frac{-4 \pm 14}{6} = \frac{-4+14}{6} \quad \frac{-4-14}{6}$
 $\frac{10}{6} \quad \frac{-18}{6}$
 $\frac{5}{3} \quad -3$
 (D)

$$13) 2x^2 - 12x + 18 = 0$$

$$144 - 4(2)(18)$$

$$144 - 144 = 0$$

(D)

$$14) 4x^2 - 3x - 3 = 0$$

$$9 - 4(4)(-3)$$

$$9 + 48$$

57 (B)

$$15) x^2 + 4x - 5 > 0$$

$$(x+5)(x-1)$$

← + + | - - - - | + + →

-5

1

-10

0

10

$$(-10)^2 + 4(-10) + 5$$

55

$$0 + 4(0) - 5$$

-5

$$100 + 40 - 5$$

135

{ x | x < -5 or x > 1 } (C)

$$16) \frac{x+1}{4x+4} \cdot \frac{(4x+4)(4x-4)}{(3x+5)(x+1)}$$

$$\frac{4x-4}{3x+5} \quad (A)$$

$$\frac{4x-4}{3x+5}$$

$$18) \frac{x-1}{(x-3)(x-4)} + \frac{x+2}{(x-3)(x+3)}$$

$$\frac{(x-1)(x+3)}{(x-3)(x+3)(x-4)} + \frac{(x+2)(x-4)}{(x-3)(x+3)(x-4)}$$

$$\frac{x^2 + 2x - 3 + x^2 - 2x - 8}{(x-3)(x+3)(x-4)}$$

$$\frac{2x^2 - 11}{(x-3)(x+3)(x-4)} \quad (B)$$

$$\frac{2x^2 - 11}{(x-3)(x+3)(x-4)} \quad (B)$$

$$19) \frac{x-4}{(x-2)(x-1)} - \frac{x-3}{(x-2)(x+2)}$$

$$\frac{(x-4)(x+2)}{(x-2)(x-1)(x+2)} - \frac{(x-3)(x-1)}{(x-2)(x+2)(x-1)}$$

$$\frac{x^2 - 2x - 8 - (x^2 - 4x + 3)}{(x-2)(x-1)(x+2)}$$

$$\frac{x^2 - 2x - 8 - (x^2 - 4x + 3)}{(x-2)(x-1)(x+2)}$$

$$\frac{2x-11}{(x-2)(x-1)(x+2)} \quad (B)$$

$$17) \frac{(2x-5)(x+1)}{(2x-5)(x+2)} \cdot \frac{-4(x+4)(x+2)}{(x+4)(x+1)}$$

-4 (D)

$$20) f(x) = \frac{1}{(x+2)(x+1)}$$

(B)

$$21) H = \frac{K}{5}$$

$$H = \frac{420}{5}$$

$$12 = \frac{K}{35}$$

$$420 = K$$

$$H = \frac{420}{30} = 14 \text{ hr (A)}$$

22) (D)

$$23) \frac{x}{x+6} - \frac{x}{x-6} = \frac{x^2+36}{(x-6)(x+6)}$$

$$\frac{x(x+6)(x-6)}{x+6} - \frac{x(x+6)(x-6)}{x-6} = \frac{x^2+36(x+6)(x-6)}{(x-6)(x+6)}$$

$$x(x-6) - x(x+6) = x^2+36$$

$$x^2-6x - x^2 - 6x = x^2+36$$

$$-12x = x^2+36$$

$$0 = x^2-12x+36$$

$$0 = (x-6)(x-6)$$

$$x = 6$$

no solution (D)