

9.5 Practice B

- ① STEP I - FACTOR
- ② STEP II - SET FACTOR = 0 AND SOLVE
- ③ Check IN ORIG EQ WITH CALC

KEY

Name _____ Date _____ Period _____

Solve each equation by factoring.

1) $x^2 + x - 12 = 0$

Signs + -

$(x+4)(x-3) = 0$

$x+4=0$
-4 -4
 $x = -4$

$x-3=0$
+3 +3
 $x = 3$

2) $x^2 - 6x + 9 = 0$

Signs - -

$(x-3)(x-3) = 0$

$x-3=0$
+3 +3
 $x = 3$

3) $x^2 - 16 = 0$

Signs + -

$(x+4)(x-4) = 0$

$x+4=0$
-4 -4
 $x = -4$

$x-4=0$
+4 +4
 $x = 4$

4) $x^2 + 9x + 20 = 0$

$(x+4)(x+5) = 0$

$x+4=0$
-4 -4
 $x = -4$

$x+5=0$
-5 -5
 $x = -5$

5) $x^2 - 8x + 15 = 0$

Signs - -

$(x-3)(x-5) = 0$

$x-3=0$
+3 +3
 $x = 3$

$x-5=0$
+5 +5
 $x = 5$

6) $x^2 + 7x + 10 = 0$

$(x+2)(x+5) = 0$

$x+2=0$
-2 -2
 $x = -2$

$x+5=0$
-5 -5
 $x = -5$

Factor the common factor out of each expression.

7) $\frac{40x^2}{5} - \frac{20x}{5} + \frac{35}{5} =$

$5(8x^2 - 4x + 7)$

8) $\frac{56x^3}{7x} + \frac{35x^2}{7x} + \frac{70x}{7x} =$

$7x(8x^2 + 5x + 10)$

Factor each completely.

9) $x^2 - 100$

$(x+10)(x-10)$

1	100
2	50
4	25
5	20
10	10

10) $x^2 - 10x + 24$

$(x-6)(x-4)$

1	24
2	12
3	8
4	6

11) $x^2 + 12x + 36$

$(x+6)(x+6)$

1	36
2	18
3	12
4	9
6	6

12) $x^2 - 9$

$(x-3)(x+3)$

1	9
3	3

13) $b^2 - 8b + 15$

$(b-3)(b-5)$

1	15
3	5

$-3 \cdot -5 = +15$ ✓
 $-3 + -5 = -8$ ✓

14) $x^2 - 18x + 81$

$(x-9)(x-9)$

1	81
3	27
9	9

15) $x^2 - 8x - 20$

$(x+2)(x-10)$

1	20
2	10
4	5

16) $x^2 + 2x - 3$

$(x-1)(x+3)$

1	3
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17) $x^2 - 10x + 16$

$(x-8)(x-2)$

1	16
2	8
4	4

18) $x^2 - 2x - 80$

$(x+8)(x-10)$

signs + -

1	80
2	40
4	20
5	16
8	10

Factor. Remember to mentally multiply to check.

16) $x^2 + 2x - 15$ 1 15
3 5

$(x+5)(x-3)$

OR $(x-3)(x+5)$

17) $x^2 + x - 90$ 1 90
2 45
3 30
5 18
6 15
9 10

$(x+10)(x-9)$

OR $(x-9)(x+10)$

18) $x^2 - 10x + 25$ 1 25
5 5

$(x-5)(x-5)$

19) $x^2 - 81$ 1 81
3 27
9 9

$(x+9)(x-9)$

OR $(x-9)(x+9)$

20) $x^2 + 11x + 28$ 1 28
2 14
4 7

$(x+4)(x+7)$

OR $(x+7)(x+4)$

21) $x^2 - 17x + 70$ 1 70
2 35
5 14
7 10

$(x-7)(x-10)$

OR $(x-10)(x-7)$

Solve each equation by factoring. Remember to use your calculator to check in the original equation!

22) $x^2 + 8x + 15 = 0$ 1 15
3 5

$(x+3)(x+5) = 0$

$x+3=0$
-3 -3

 $x = -3$

$x+5=0$
-5 -5

 $x = -5$

23) $x^2 - 10x + 24 = 0$ 1 24
2 12
3 8
4 6

$(x-4)(x-6) = 0$

$x-4=0$
+4 +4

 $x = 4$

$x-6=0$
+6 +6

 $x = 6$

C: $(-3)^2 + 8(-3) + 15 = 0$
 $0 = 0 \checkmark$

C: $(4)^2 - 10(4) + 24 = 0$
 $0 = 0 \checkmark$

C: $(-5)^2 + 8(-5) + 15 = 0$
 $0 = 0 \checkmark$

C: $(6)^2 - 10(6) + 24 = 0$
 $0 = 0 \checkmark$