27B

1) $X^2 + X - 56 = 0$
$(X + 8)(X - 7) = 0$

2) $X + 8 = 0$ $\quad X - 7 = 0$
$X = -8$ $\quad X = 7$

3) $(-8)^2 + (-8) = 56$ $\quad (7)^2 + (7) = 56$
$64 - 8 = 56$ $\quad 49 + 7 = 56$
$56 = 56$ $\quad 56 = 56$

4) $(X - 5)(X - 6) = 0$

5) $X - 5 = 0$ $\quad X - 6 = 0$
$X = 5$ $\quad X = 6$

6) $(5)^2 - 11(5) + 30 = 0$ $\quad (6)^2 - 11(6) + 30 = 0$
$25 - 55 + 30 = 0$ $\quad 36 - 66 + 30 = 0$
$0 = 0$ $\quad 0 = 0$

7) $(X - 7)(X - 8) = 0$

8) $X - 7 = 0$ $\quad X - 8 = 0$
$X = 7$ $\quad X = 8$

9) $(7)^2 - 15(7) + 56 = 0$ $\quad (8)^2 - 15(8) + 56 = 0$
$49 - 105 + 56 = 0$ $\quad 64 - 120 + 56 = 0$
$0 = 0$ $\quad 0 = 0$

10) $(X - 5)(X - 8) = 0$

11) $X - 5 = 0$ $\quad X - 8 = 0$
$X = 5$ $\quad X = 8$

12) $(5)^2 - 13(5) + 40 = 0$
$25 - 65 + 40 = 0$
$0 = 0$

$(8)^2 - 13(8) + 40 = 0$
$64 - 104 + 40 = 0$
$0 = 0$

27C

1) $(2X + 3)(X + 2) = 0$
$2X + 3 = 0$ $\quad X + 2 = 0$
$X = -3/2$ $\quad X = -2$

2) $2(-3/2)^2 + 7(-3/2) + 6 = 0$
$2(9/4) - 21/2 + 6 = 0$
$9/2 - 21/2 + 12/2 = 0$
$0 = 0$
$2(-2)^2 + 7(-2) + 6 = 0$
$8 - 14 + 6 = 0$
$0 = 0$

3) $(X + 2)(X + 4) = 0$
$X + 2 = 0$ $\quad X + 4 = 0$
$X = -2$ $\quad X = -4$

4) $(-2)^2 + 6(-2) + 8 = 0$
$4 - 12 + 8 = 0$
$0 = 0$

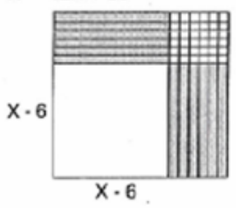
$(-4)^2 + 6(-4) + 8 = 0$
$16 - 24 + 8 = 0$
$0 = 0$

5) $X^2 + 3X - 10 = 0$
$(X + 5)(X - 2) = 0$
$X + 5 = 0$ $\quad X - 2 = 0$
$X = -5$ $\quad X = 2$

6) $(-5)^2 + 3(-5) + 4 = 14$
$25 - 15 + 4 = 14$
$14 = 14$

$(2)^2 + 3(2) + 4 = 14$
$4 + 6 + 4 = 14$
$14 = 14$

7) $X^2 - 12X + 36$



8)
$$\begin{array}{r} X - 6 \\ \times\ X - 6 \\ \hline -6X + 36 \\ X^2 - 6X \\ \hline X^2 - 12X + 36 \end{array}$$

9) $(X - 4)(X + 4)$

10) $(X - 7)(X + 7)$

11) $-16 + 4 = -12$

12) $3^{-1+1} = 3^0 = 1$

13) $X^{4+3} = X^7$

14) $2XY^{-2} - 3X^{-2}Y^3 + 5XY^{-2} = 7XY^{-2} - 3X^{-2}Y^3$

15) $4Y = -2X + 8$
$Y = -1/2\,X + 2$

16) M = 2 (negative reciprocal)

17) 11

18) 2 x 2 x 5 x 5

19) $Y = X - 3$
$-Y = -2X + 4$
$0 = -X + 1$ $\quad Y = (1) - 3$
$X = 1$ $\quad Y = -2$
(1, -2)

20) $(2X)(2X + 1) + 3(2X + 1) =$
$(4X^2 + 2X) + (6X + 3)$

27D

1) $(2X + 1)(X + 4) = 0$
$2X + 1 = 0$ $\quad X + 4 = 0$
$X = -1/2$ $\quad X = -4$

2) $2(-1/2)^2 + 9(-1/2) + 4 = 0$
$2(1/4) - 9/2 + 4 = 0$
$1/2 - 9/2 + 8/2 = 0$
$0 = 0$
$2(-4)^2 + 9(-4) + 4 = 0$
$2(16) - 36 + 4 = 0$
$0 = 0$

3) $(X + 17)(X - 4) = 0$
$X + 17 = 0$ $\quad X - 4 = 0$
$X = -17$ $\quad X = 4$

4) $(-17)^2 + 13(-17) - 68 = 0$
$289 - 221 - 68 = 0$
$0 = 0$

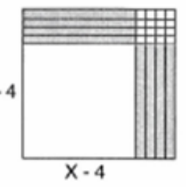
$(4)^2 + 13(4) - 68 = 0$
$16 + 52 - 68 = 0$
$0 = 0$

5) $X^2 - 2X - 3 = 0$
$(X - 3)(X + 1) = 0$
$X - 3 = 0$ $\quad X + 1 = 0$
$X = 3$ $\quad X = -1$

6) $(3)^2 - 2(3) + + 5 = 8$
$9 - 6 + 5 = 8$
$8 = 8$

$(-1)^2 - 2(-1) + 5 = 8$
$1 + 2 + 5 = 8$
$8 = 8$

7) $X^2 - 8X + 16$



8)
$$\begin{array}{r} X - 4 \\ \times\ X - 4 \\ \hline -4X + 16 \\ X^2 - 4X \\ \hline X^2 - 8X + 16 \end{array}$$

9) $(X - Y)(X + Y)$

10) $4(X^2 - Y^2)$
$4(X - Y)(X + Y)$

11) $-9 - 4 = -13$

12) $4^{-2+3} = 4^1 = 4$

13) $X^{6-4} = X^2$

14) $2B^3 - 3B^3 + 5B^5 = 5B^5 - B^3$

15) $(25)(B) = (4)(9)$
$25B = 36$
$B = 36/25 = 1\ 11/25$

16) $(3.4)(15) = (5)(R)$
$51 = 5R$
$R = 51/5 = 10\ 1/5$ or 10.2

17) $520 \div 65 = 8$ hours

18) $240 \div 6 = 40$ mph

19) $Y + 2(4) = -2$ $\quad -10 + 2X = -2$
$Y = -10$ $\quad 2X = 8$
$X = 4$
(4, -10)

20) $(3X + 4)(X + 2) =$ ..... =
$(3X^2 + 6X) + (4X + 8)$