TEST A Pages 17-18

I.

1. $51 - y$
2. $n + 2$; $n - 1$
3. $3y$; $y - 6$; $3y + 5$;
   $(y + 8) + (3y + 8) = 4y + 16$
4. $26 + s$; $g - 26$

II. The check is left for the teacher.

1. $3x = 15$
   $\frac{3x}{3} = \frac{15}{3}$
   $x = 5$
2. $\frac{1}{2}x = 30$
   $2(\frac{1}{2}x) = 2(30)$
   $x = 60$
3. $\frac{2}{3}x = 12$
   $\frac{3}{2}(\frac{2}{3}x) = \frac{3}{2}(12)$
   $x = 18$
4. $6 + y = 19$
   $6 + y - 6 = 19 - 6$
   $y = 13$
5. $z - 7 = 12$
   $z - 7 + 7 = 12 + 7$
   $z = 19$
6. $6a + 2 = 20$
   $6a + 2 - 2 = 20 - 2$
   $6a = 18$
   $\frac{6a}{6} = \frac{18}{6}$
   $a = 3$
7. $3y - 5 = 7$
   $3y - 5 + 5 = 7 + 5$
   $3y = 12$
   $\frac{3y}{3} = \frac{12}{3}$
   $y = 4$
8. $11x - 8x - 8 = 10$
   $3x - 8 = 10$
   $3x - 8 + 8 = 10 + 8$
   $3x = 18$
   $\frac{3x}{3} = \frac{18}{3}$
   $x = 6$

III.

1. let x = length of shorter room
   $x + 6$ = length of longer room
   length of room = length of room
   $(x) + (x + 6) = 38$
2. let $4x$ = original price
   x = amount of reduction
   selling price = selling price
   $4x - x = 48$
3. let x = number sold by Carol
   $4x$ = number sold by Tom
   total magazines sold = total magazines sold
   $(x) + (4x) = 35$
4. let x = length of one side
   $x + 3$ = length of second side
   $2x$ = length of third side
   perimeter of triangle = perimeter of triangle
   $(x) + (x + 3) + (2x) = 27$

TEST B Pages 18

I.

1. $30 - x$
2. $e - 2$; $e + 1$
3. $g - 14$; $s + 14$
4. $2m$; $m - 7$; $2m + 11$;
   $(m + 5) + (2m + 5) = 3m + 10$

II. The check is left for the teacher.

1. $5x = 30$
$\frac{5x}{5} = \frac{30}{5}$
$x = 6$

2. $\frac{1}{3}x = 8$
$3(\frac{1}{3}x) = 3(8)$
$x = 24$

3. $\frac{3}{4}y = 12$
$\frac{4}{3}(\frac{3}{4}y) = \frac{4}{3}(12)$
$y = 16$

4. $a + 11 = 17$
$a + 11 - 11 = 17 - 11$
$a = 6$

5. $b - 8 = 4$
$b - 8 + 8 = 4 + 8$
$b = 12$

6. $8z + 5 = 29$
$8z + 5 - 5 = 29 - 5$
$8z = 24$
$\frac{8z}{8} = \frac{24}{8}$
$z = 3$

7. $5x - 2 = 8$
$5x - 2 + 2 = 8 + 2$
$5x = 10$
$\frac{5x}{5} = \frac{10}{5}$
$x = 2$

8. $9x - 5x - 11 = 17$
$4x - 11 = 17$
$4x - 11 + 11 = 17 + 11$
$4x = 28$
$\frac{4x}{4} = \frac{28}{4}$
$x = 7$

III.

1. let x = number of peanut butter
x - 18 = number of oatmeal
total cookies baked = total cookies baked
$(x) + (x - 18) = 112$

2. let x = earnings of younger
3x = earnings of older
total earned = total earned
$(x) + (3x) = 75$

3. let x = Greg's age
6x = Father's age
sum of ages = sum of ages
$(x) + (6x) = 42$

4. let w = width of rectangle
4w = length of rectangle
perimeter = perimeter
$2w + 2(4w) = 65$

TEST C Page 19

1. 1. let x = number of bus drivers, 3
2. 5x = number of parents, 15
15x = number of boys, 45
15x - 12 = number of girls, 33
total riders = total riders
3. $(x) + (5x) + (15x) + (15x - 12) = 96$
4. $36x - 12 = 96$
$36x - 12 + 12 = 96 + 12$
$36x = 108$
$\frac{36x}{36} = \frac{108}{36}$
$x = 3$

5.
$$\begin{array}{r} 3 \\ 15 \\ 45 \\ +33 \\ \hline 96 \end{array} \checkmark$$

Time Tests Pages 32-33

(A)

1. $2x^2 - 3xy$
$= 2\cdot 3^2 - 3\cdot 3\cdot 2$
$= 2\cdot 9 - 3\cdot 3\cdot 2$
$= 18 - 9\cdot 2$
$= 18 - 18$
$= 0$

2. $3mn + nm^2$
$= 3\cdot 4\cdot 3 + 3\cdot 4^2$
$= 3\cdot 4\cdot 3 + 3\cdot 16$
$= 36 + 48$
$= 84$

3. $ab^2 - 2ab$
$= 3\cdot 2^2 - 2\cdot 3\cdot 2$
$= 3\cdot 4 - 2\cdot 3\cdot 2$
$= 12 - 6\cdot 2$
$= 12 - 12$
$= 0$

4. $\frac{x^2}{2} + \frac{4xy}{5}$
$= \frac{2^2}{2} + \frac{4\cdot 2\cdot 5}{5}$
$= \frac{4}{2} + \frac{40}{5}$
$= 2 + 8$
$= 10$

5. $a^2 + 3a^2b$
$= 2^2 + 3\cdot 2^2\cdot 4$
$= 4 + 3\cdot 4\cdot 4$
$= 4 + 48$
$= 52$

6. $5a^2 - 2ac$
$= 5\cdot 2^2 - 2\cdot 2\cdot 3$
$= 5\cdot 4 - 2\cdot 2\cdot 3$
$= 20 - 12$
$= 8$

7. $3ab + a^2b$
$= 3\cdot 2\cdot 3 + 2^2\cdot 3$
$= 3\cdot 2\cdot 3 + 4\cdot 3$
$= 18 + 12$
$= 30$

8. $5x^2 - y^2$
$= 5\cdot 3^2 - 5^2$
$= 5\cdot 9 - 25$
$= 45 - 25$
$= 20$

9. $\frac{a^2}{3} + \frac{4ay}{6}$
$= \frac{3^2}{3} + \frac{4\cdot 3\cdot 4}{6}$
$= \frac{9}{3} + \frac{48}{6}$
$= 3 + 8$
$= 11$

10. $r^2 + s^2$
$= 5^2 + 3^2$
$= 25 + 9$
$= 34$

11. $4x^2 - 2xy$
$= 4\cdot 2^2 - 2\cdot 2\cdot 3$
$= 4\cdot 4 - 2\cdot 2\cdot 3$
$= 16 - 12$
$= 4$

12. $ab^2 + 2ab$
$= 4\cdot 3^2 + 2\cdot 4\cdot 3$
$= 4\cdot 9 + 2\cdot 4\cdot 3$
$= 36 + 24$
$= 60$

13. $cd^2 - 3cd$
$= 3\cdot 4^2 - 3\cdot 3\cdot 4$
$= 3\cdot 16 - 3\cdot 3\cdot 4$
$= 48 - 36$
$= 12$

14. $(x + y)^2$
$= (5 + 3)^2$
$= 8^2$
$= 64$

15. $3rs - 2s^2$
$= 3\cdot 4\cdot 5 - 2\cdot 5^2$
$= 3\cdot 4\cdot 5 - 2\cdot 25$
$= 60 - 50$
$= 10$

(B)

1. $7a^2 + 7$
2. $4x + y$
3. $2x^3 + 6y$
4. $5x^2 + 2$
5. $3xy + 21$
6. $11a^2 + 9b$
7. $11x^2 + 20x$
8. $2x + 3$
9. $17b^2 + 7$
10. $19ab + 8c$
11. $6a + 6b^3$
12. $18r + 19$
13. $9a^3 + 1$
14. $5a$

Test A Page 34

I
1. $3pq$ 2. $xy - m^2$ 3. $(x - y)(3y + 4)$ 4. $\frac{3x}{y^2}$ 5. $a + 2b$

II
1. $5x^3$ 2. m^4s^2 3. $6a^2b^3$

III
Answers will vary.

IV
1. $3xy - 2mn$
$= 3\cdot3\cdot2 - 2\cdot4\cdot1$
$= 18 - 8$
$= 10$

2. $\frac{m^2}{4y} + \frac{ax}{7m}$
$= \frac{4^2}{4\cdot2} + \frac{0\cdot3}{7\cdot4}$
$= \frac{16}{8} + 0$
$= 2$

3. xy^3
$= 3\cdot2^3$
$= 3\cdot8$
$= 24$

4. $x^3 + y^2$
$= 3^3 + 2^2$
$= 27 + 4$
$= 31$

5. $m + xy - m \div y$
$= 4 + 3\cdot2 - 4 \div 2$
$= 4 + 6 - 2$
$= 8$

6. $(y + m)^2$
$= (2 + 4)^2$
$= 6^2$
$= 36$

7. $(m - n)(x + y)$
$= (4 - 1)(3 + 2)$
$= 3\cdot5$
$= 15$

V
1. $3a^2 + 2a + 1$ 2. $6x + 4y + 8z$ 3. $6ab + 9$ 4. 0

TEST B Pages 34-35

I
1. $b^3 + c^2$ 2. $5a\cdot2c$ or $10ac$ 3. $(3a - 7)(2a + 5)$ 4. $\frac{b^2}{xy}$ 5. $p - 2q$

II
1. $3a^3$ 2. b^2d^4 3. $4a^3bc^2$

III
1.-3. Answers will vary. 4. binomial

IV
1. 7×5

2. $8 - 3 \times 2 + 24 \div 2$
$= 8 - 6 + 12$
$= 14$

V
1. $3ab + 5cd$
$= 3\cdot0\cdot1 + 5\cdot2\cdot3$
$= 0 + 30$
$= 30$

2. $\frac{d^3}{b + c}$
$= \frac{3^3}{1 + 2}$
$= \frac{27}{3}$
$= 9$

3. $d^2 - c^2$
$= 3^2 - 2^2$
$= 9 - 4$
$= 5$

Test A Page 34

I
1. $3pq$ 2. $xy - m^2$ 3. $(x - y)(3y + 4)$ 4. $\frac{3x}{y^2}$ 5. $a + 2b$

II
1. $5x^3$ 2. m^4s^2 3. $6a^2b^3$

III
Answers will vary.

IV
1. $3xy - 2mn$
$= 3\cdot3\cdot2 - 2\cdot4\cdot1$
$= 18 - 8$
$= 10$

2. $\frac{m^2}{4y} + \frac{ax}{7m}$
$= \frac{4^2}{4\cdot2} + \frac{0\cdot3}{7\cdot4}$
$= \frac{16}{8} + 0$
$= 2$

3. xy^3
$= 3\cdot2^3$
$= 3\cdot8$
$= 24$

4. $x^3 + y^2$
$= 3^3 + 2^2$
$= 27 + 4$
$= 31$

5. $m + xy - m \div y$
$= 4 + 3\cdot2 - 4 \div 2$
$= 4 + 6 - 2$
$= 8$

6. $(y + m)^2$
$= (2 + 4)^2$
$= 6^2$
$= 36$

7. $(m - n)(x + y)$
$= (4 - 1)(3 + 2)$
$= 3\cdot5$
$= 15$

V
1. $3a^2 + 2a + 1$ 2. $6x + 4y + 8z$ 3. $6ab + 9$ 4. 0

TEST B Pages 34-35

I
1. $b^3 + c^2$ 2. $5a\cdot2c$ or $10ac$ 3. $(3a - 7)(2a + 5)$ 4. $\frac{b^2}{xy}$ 5. $p - 2q$

II
1. $3a^3$ 2. b^2d^4 3. $4a^3bc^2$

III
1.-3. Answers will vary. 4. binomial

IV
1. 7×5

2. $8 - 3 \times 2 + 24 \div 2$
$= 8 - 6 + 12$
$= 14$

V
1. $3ab + 5cd$
$= 3\cdot0\cdot1 + 5\cdot2\cdot3$
$= 0 + 30$
$= 30$

2. $\frac{d^3}{b + c}$
$= \frac{3^3}{1 + 2}$
$= \frac{27}{3}$
$= 9$

3. $d^2 - c^2$
$= 3^2 - 2^2$
$= 9 - 4$
$= 5$