10F

1) $8^2 + 6^2 = H^2$

$64 + 36 = H^2$

$100 = H^2$ 10 ft. = H

2) $5^2 + 10^2 = 100^2$

$25 + 100 = 10{,}000$

$125 \neq 10{,}000$; no

3) $A - 3 = 19$

$A = 19 + 3$

$A = 22$

4) $(22) - 3 = 19$

$19 = 19$

5) $7X - 5 = 6X - 10$

$7X - 6X = -10 + 5$

$X = -5$

6) $7(-5) - 5 = 6(-5) - 10$

$-35 - 5 = -30 - 10$

$-40 = -40$

7) ± 7

8) 81

9) $4 \times 4 = 16$

10) $\pm \frac{3}{5}$

11) $\frac{2}{7} + \frac{4}{8} = \frac{16}{56} + \frac{28}{56} = \frac{44}{56} = \frac{11}{14}$

12) $\frac{1}{4} + \frac{5}{9} = \frac{9}{36} + \frac{20}{36} = \frac{29}{36}$

13) $\frac{4}{5} - \frac{1}{2} = \frac{8}{10} - \frac{5}{10} = \frac{3}{10}$

14) $\frac{3}{4} \div \frac{1}{7} = \frac{3}{4} \times \frac{7}{1} = \frac{21}{4}$

15) $\frac{3}{5} \div \frac{1}{8} = \frac{3}{5} \times \frac{8}{1} = \frac{24}{5}$

16) $\frac{7}{10} \div \frac{1}{9} = \frac{7}{10} \times \frac{9}{1} = \frac{63}{10}$

17) 480

18) $6N - 8 = 5N + 2$

$6N - 5N = 2 + 8$

$N = 10$

19) $\frac{3}{4} \div \frac{1}{4} = \frac{3 \div 1}{1} = 3$

20) $12^2 + 16^2 = H^2$

$144 + 256 = H^2$

$400 = H^2$

20 ft. = H

11A

1) done

2) done

3) $7 - 3 = 3 - 7$

$4 = -4$ false

4) $7 \times 9 = 9 \times 7$

$63 = 63$ true

5) $(2 + 3) + 8 = 2 + (3 + 8)$

$5 + 8 = 2 + 11$

$13 = 13$ true

6) $(4 \times 5) \times 6 = 4 \times (5 \times 6)$

$20 \times 6 = 4 \times 30$

$120 = 120$ true

7) $(10 - 4) - 1 = 10 - (4 - 1)$

$6 - 1 = 10 - 3$

$5 = 7$ false

8) $(9 \div 3) \div 3 = 9 \div (3 \div 3)$

$3 \div 3 = 9 \div 1$

$1 = 9$ false

9) done

10) $7 + 5 = 5 + 7$

11) $X + 2Y = 2Y + X$

12) $20 \times 13 = 13 \times 20$

13) done

14) $9 \times (5 \times 2) = (9 \times 5) \times 2$

15) $3B + (6B + 4B) = (3B + 6B) + 4B$

16) $(3 \times R) \times 5 = 3 \times (R \times 5)$

17) addition; multiplication

18) subtraction; division

19) addition; multiplication

20) subtraction; division

11B

1) $10 + 13 = 13 + 10$

$23 = 23$ true

2) $16 \div 2 = 2 \div 16$

$8 = 2/16$ false

3) $8 \times 4 = 4 \times 8$

$32 = 32$ true

4) $12 - 5 = 5 - 12$

$7 = -7$ false

5) $(3 \times 4) \times 5 = 3 \times (4 \times 5)$

$12 \times 5 = 3 \times 20$

60×60 true

6) $(12 \div 6) \div 2 = 12 \div (6 \div 2)$

$2 \div 2 = 12 \div 3$

$1 = 4$ false

7) done

8) $2A + B - A + 3B =$

$2A - A + B + 3B =$

$A + 4B$

9) $5Q + 3C - C + Q + 4Q - 5C =$

$5Q + Q + 4Q + 3C - C - 5C =$

$10Q - 3C$

10) $2X + 2 - X + 2X =$

$2X - X + 2X + 2 =$

$3X + 2$

11) $3Y - 1 + 2Y - 1 - 4Y =$

$3Y + 2Y - 4Y - 1 - 1 =$

$Y - 2$

12) $5A - 6B - 3B + 10A - 8 =$

$5A + 10A - 6B - 3B - 8 =$

$15A - 9B - 8$

13) false

14) true

15) false

16) true

17) $5 \times 3 = 3 \times 5$; same number

18) $X \cdot Y = Y \cdot X$

11C

1) $6 \times 7 = 7 \times 6$
$42 = 42$ true

2) $25 - 15 = 15 - 25$
$10 = -10$ false

3) $(-1) + (-8) = (-8) + (-1)$
$-9 = -9$ true

4) $45 \div 5 = 5 \div 45$
$9 = 5/45$ false

5) $(2 + 3) + 4 = 2 + (3 + 4)$
$5 + 4 = 2 + 7$
$9 = 9$ true

6) $(7 - 4) - 1 = 7 - (4 - 1)$
$3 - 1 = 7 - 3$
$2 = 4$ false

7) $4Q + 2C - 2C - 2Q - 3C =$
$4Q - 2Q + 2C - 2C - 3C =$
$2Q - 3C$

8) $-5M - 7 + 3M - 4 + 5 =$
$-5M + 3M - 7 - 4 + 5 =$
$-2M - 6$

9) $4A - 5 - 2A + 7 - 1 =$
$4A - 2A - 5 + 7 - 1 =$
$2A + 1$

10) $15X + 6 - 4Y - 5Y - 14X + 10 =$
$15X - 14X - 4Y - 5Y + 6 + 10 =$
$X - 9Y + 16$

11) $3A + 2 + 7B + 6A + 8 =$
$3A + 6A + 7B + 2 + 8 =$
$9A + 7B + 10$

12) $-5X + 3 + 8X - 4 =$
$-5X + 8X + 3 - 4 =$
$3X - 1$

13) true

14) false

15) $\$25 + \$10 = \$10 + \$25$

16) $6 \div 3 = 2$
$3 \div 6 = 3/6 = 1/2$

17) $\$100 - \$30 = \$70$
$\$30 - \$100 = \$ -70$
$\$70 > \$ -70$; David

18) $5 \times \$8 = \$40$
$8 \times \$5 = \$40$
$\$40 = \$40$

11D

1) $8K - 6 + 3K - 2 + 3 =$
$8K + 3K - 6 - 2 + 3 =$
$11K - 5$

2) $13A - 8Z - 2A - 12Z =$
$13A - 2A - 8Z - 12Z =$
$11A - 20Z$

3) $5^2 + 12^2 = H^2$
$25 + 144 = H^2$
$169 = H^2$
$13 \text{ ft.} = H$

4) $3^2 + 4^2 = 5^2$
$9 + 16 = 25$
$25 = 25$ yes

5) $-X + 11 = -2X - 7$
$-X + 11 - 11 = -2X - 7 - 11$
$-X = -2X - 18$
$-X + 2X = -2X + 2X - 18$
$X = -18$

6) $-(-18) + 11 = -2(-18) - 7$
$29 = 36 - 7$
$29 = 29$

7) $A + 10 = 23$
$A + 10 - 10 = 23 - 10$
$A = 13$

8) $(13) + 10 = 23$
$23 = 23$

9) $1\frac{5}{8} = \frac{8}{8} + \frac{5}{8} = \frac{13}{8}$

10) $4\frac{1}{2} = \frac{8}{2} + \frac{1}{2} = \frac{9}{2}$

11) $\frac{11}{3} = \frac{9}{3} + \frac{2}{3} = 3\frac{2}{3}$

12) $\frac{8}{5} = \frac{5}{5} + \frac{3}{5} = 1\frac{3}{5}$

13) $\frac{\cancel{3}}{\cancel{5}} \times \frac{\cancel{5}}{\cancel{3}_3} = \frac{1}{3}$

14) $\frac{1}{3} \times \frac{7}{8} = \frac{7}{24}$

15) $\frac{2}{5} \div \frac{3}{10} = \frac{2}{\cancel{5}} \times \frac{\cancel{10}^2}{3} = \frac{4}{3} = 1\frac{1}{3}$

16) $\frac{3}{4} \div \frac{1}{6} = \frac{3}{\cancel{4}_2} \times \frac{\cancel{6}^3}{1} = \frac{9}{2} = 4\frac{1}{2}$

17) $3\frac{2}{3} = \frac{9}{3} + \frac{2}{3} = \frac{11}{3}$ of a mile

18) $\frac{14}{5} = \frac{10}{5} + \frac{4}{5} = 2\frac{4}{5}$

19) $\frac{1}{3} \times \frac{2}{3} = \frac{2}{9}$

20) yes

11E

1) $10C - 3C - 9D + 3D - C =$
$6C - 6D$

2) $3 + 6X - 1 + X =$
$7X + 2$

3) $6^2 + L^2 = 10^2$
$36 + L^2 = 100$
$L^2 = 100 - 36$
$L^2 = 64$
$L = 8$

4) $12^2 + L^2 = 15^2$
$144 + L^2 = 225$
$L^2 = 225 - 144$
$L^2 = 81$
$L = 9$

5) done

6) done

7) $4B + 3B - 6B = 1 + 7$
$B = 8$

8) $4(8) + 3(8) - 6(8) = 1 + 7$
$32 + 24 - 48 = 8$
$8 = 8$

9) $\frac{3}{8} \times \frac{4}{5} = \frac{12}{40} = \frac{3}{10}$

10) $\frac{1}{2} \times \frac{5}{9} = \frac{5}{18}$

11) $\frac{5}{9} \div \frac{3}{7} = \frac{5}{9} \times \frac{7}{3} = \frac{35}{27} = \frac{27}{27} + \frac{8}{27} = 1\frac{8}{27}$

12) $\frac{4}{7} \div \frac{2}{3} = \frac{\cancel{4}^{2}}{7} \times \frac{3}{\cancel{2}} = \frac{6}{7}$

13) -4

14) -5

15) 6

16) 7

17) no

18) $3Q + 4Q - 5 = 6Q + 7$
$7Q - 6Q = 7 + 5$
$Q = 12$

19) $\frac{\cancel{2}}{3} \times \frac{1}{\cancel{4}_{2}} = \frac{1}{6}$

20) $36 \div 6 = 6;\ 6 \times 1 = 6$

11F

1) $A + B + 2A - 3B =$
$3A - 2B$

2) $2F + 3 - F + 1 =$
$F + 4$

3) $16^2 + L^2 = 20^2$
$256 + L^2 = 400$
$L^2 = 400 - 256$
$L^2 = 144$
$L = 12$ in.

4) $24^2 + L^2 = 25^2$
$576 + L^2 = 625$
$L^2 = 625 - 576$
$L^2 = 49$
$L = 7$ in.

5) $6D - 10 + 5 = 5D - 34$
$6D - 5D = -34 + 10 - 5$
$D = -29$

6) $6(-29) - 10 + 5 = 5(-29) - 34$
$-174 - 10 + 5 = -145 - 34$
$-179 = -179$

7) $4A - 3A = 7 + 9$
$A = 16$

8) $4(16) - 3(16) = 7 + 9$
$64 - 48 = 16$
$16 = 16$

9) $\frac{1}{\cancel{2}} \times \frac{\cancel{8}^{3}}{8} = \frac{3}{8}$

10) $\frac{7}{\cancel{3}^{3}} \times \frac{\cancel{8}}{4} = \frac{7}{12}$

11) $\frac{11}{12} \div \frac{1}{3} = \frac{11}{\cancel{12}_{4}} \times \frac{\cancel{3}}{1} = \frac{11}{4} = \frac{8}{4} + \frac{3}{4} = 2\frac{3}{4}$

12) $\frac{7}{7} \div \frac{1}{8} = \frac{7}{7} \times \frac{8}{1} = \frac{56}{7} = 8$

13) ± 8

14) $\pm X$

15) $9 \times 9 = 81$

16) $\frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} = \frac{1}{27}$

17) no

18) $4A + 6 - 2A = A + 12$
$2A + 6 = A + 12$
$2A = A + 6$
$A = 6$

19) $\frac{4}{6} \div \frac{2}{6} = \frac{\cancel{4}^{2}}{\cancel{6}} \times \frac{\cancel{6}}{\cancel{2}} = 2$

20) $\frac{9}{10} \div \frac{1}{5} = \frac{9}{\cancel{10}_{2}} \times \frac{\cancel{5}}{1} = \frac{9}{2} = \frac{8}{2} + \frac{1}{2} = 4\frac{1}{2}$