Fully-Worked Solutions

PRACTICE 5

Section A

1 Answer: C

2 Answer: A

3 Answer: C

4 $\frac{p+9}{3}-\frac{q}{r}=\frac{3+9}{3}-\frac{4}{-2}$

$=6$

Answer: B

5 $\frac{3}{4}p-\frac{1}{2}-\frac{1}{3}p+2=\frac{9}{12}p-\frac{4}{12}p-\frac{1}{2}+\frac{4}{2}$

$=\frac{5}{12}p+\frac{3}{2}$

Answer: C

6 $(5r^2+3rs)-(8r^2+2rs)$

$=5r^2-8r^2+3rs-2rs$

$=rs-3r^2$

Answer: C

7 $\frac{24pq^3r}{3qr^2}=\frac{8pq^2}{r}$

Answer: D

8 $\frac{12xy^3}{4x^3y}\times 3x=\frac{9y^2}{x}$

Answer: B

9 $4ab+2a-(8ab+b)$

$=4ab-8ab+2a-b$

$=2a-b-4ab$

Answer: C

10 $6xy^2\times 5x^2-\frac{1}{2}\times 6xy^2\times 4x^2$

$=30x^3y^2-12x^3y^2$

$=18x^3y^2$

Answer: A

11 $2(x+2)+2(2x)$

$=2x+4+4x$

$=6x+4$

Answer: C

Section B

1

$-4pv$	$\frac{x^2}{4}$
$-\frac{2zy}{7}$	$0.2pv$
$2x^2$	$8y^2x$
$-0.3xy^2$	$4yz$

2 (a) $\frac{pq+3}{r}=\frac{(4)(3)+3}{-5}=-3$

(b) $\frac{pr}{2}+3q=\frac{(4)(-5)}{2}+3(3)=-1$

(c) $\frac{qr}{5}+p=\frac{(3)(-5)}{5}+4=1$

(d) $\frac{3}{q}-p-r=\frac{3}{3}-4-(-5)=2$

3 (a) $3k+4h=7h$ [✗]

(b) $\frac{x^2}{4}+\frac{x^2}{6}=\frac{3x^2+2x^2}{12}=\frac{5x^2}{12}$ [✓]

(c) $4x^2y\times 6yz=24x^2y^2z$ [✗]

(d) $3x^2-(5-x^2)=3x^2+x^2-5$

$=4x^2-5$ [✗]

4 (a) $\frac{8x^2y}{2xy}=4x$

(b) $5x^2y-3x^2y=2x^2y$

(c) $2xy\times 3xy^2=6x^2y^3$

(d) $6xy+4xy=10xy$

Section C

1 (a) Nora = n, Maya = $n+4$, Liam = $2n$

Total = $n+n+4+2n=4n+4$

(b) (i) $2n^2-6n-9n^2-3+7n$

$=2n^2-9n^2-6n+7n-3$

$=-7n^2+n-3$

$=n-7n^2-3$

(ii) $\left(\frac{4}{5}f^2-2g\right)-\left(\frac{5}{6}f^2-\frac{1}{2}g\right)$

$=\frac{4}{5}f^2-2g-\frac{5}{6}f^2+\frac{1}{2}g$

$=\frac{24}{30}f^2-\frac{25}{30}f^2-\frac{4}{2}g+\frac{1}{2}g$

$=-\frac{1}{30}f^2-\frac{3}{2}g$

(iii) $-2ab\times 8b^2=-16ab^3$

(iv) $\frac{12xy^3}{3xy}=4y^2$

(c) (i) $x+1+x+1+3x-4+3x-4=8x-6$

(ii) $8(4)-6=26$ cm

2 (a) (i) $-5ab\div 12a^3b^2\times 3ab^3$

$=\frac{-5ab\times 3ab^3}{12a^3b^2}$

$=-\frac{5b^2}{4a}$

(ii) $7xy^3-4xy\times 5y^2$

$=7xy^3-20xy^3$

$=-13xy^3$

(b) (i) $\frac{9s^2t^3}{6st^2} \times 2 = 3st$

(ii) Height of the triangle
$= 3(3)(2)$
$= 18$ cm

(c) $84p^3qr^3 \div 6pq^2 \div 4pqr$

$= \frac{84p^3qr^3}{6pq^2 \times 4pqr}$

$= \frac{7pr^2}{2q^2}$

3 (a) (i) $\frac{x}{3} + 4$

(ii) $5x^2$

(iii) $(4x)^2 = 16x^2$ cm

(b) (i) Unlike terms

(ii) Like terms

(iii) Unlike terms

(c) (i) $st \times st \times st = s^3t^3$

(ii) $(3x + 5)(3x + 5) = 9x^2 + 30x + 25$

(d) $5x - 6y - (4y - 3x) + 2xy$
$= 5x - 6y - 4y + 3x + 2xy$
$= 8x - 10y + 2xy$