

Homework 26.1

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Divide.

1) $(27v^5 + 5v^4 + 9v^3) \div 9v$

$$\frac{27v^5}{9v} + \frac{5v^4}{9v} + \frac{9v^3}{9v}$$

$$= 3v^4 + \frac{5}{9}v^3 + v^2$$

3) $(b^3 + 30b^2 + 5b) \div 10b^2$

$$\frac{b^3}{10b^2} + \frac{30b^2}{10b^2} + \frac{5b}{10b^2}$$

$$= \frac{b}{10} + \frac{3}{1} + \frac{1}{2b}$$

2) $(4n^8 + 2n^7 + 4n^6) \div 8n^2$

$$\frac{4n^8}{8n^2} + \frac{2n^7}{8n^2} + \frac{4n^6}{8n^2} =$$

$$= \frac{n^6}{2} + \frac{n^5}{4} + \frac{n^4}{2}$$

4) $(9x^4 + 3x^3 + 36x^2) \div 9x^3$

$$\frac{9x^4}{9x^3} + \frac{3x^3}{9x^3} + \frac{36x^2}{9x^3}$$

$$= x + \frac{1}{3} + \frac{4}{x}$$

Factor the greatest common factor out of each expression.

5) $-24y^6 - 80y^7 + 72y^6x^3$

$$-4y^6(6 + 20y - 18x^3)$$

$$-8y^6(3 + 10y - 9x^3)$$

6) $-8x^2y^4 + 32x^3y^3 - 32x^2y^2$

$$-8x^2y^2(y^2 - 4xy + 4)$$

7) $24m^4 + 36mn - 42m$

$$6m(4m^3 + 6n - 7)$$

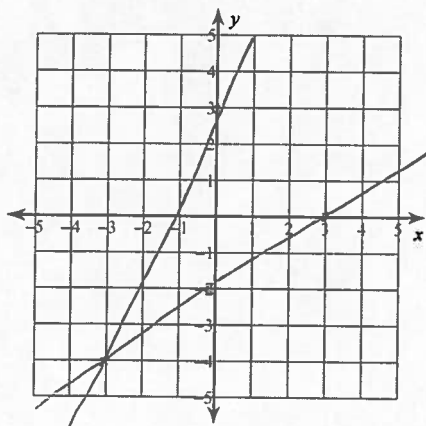
8) $-10x^2y^7 + 100x^2y^4 - 90xy^4$

$$-10xy^4(xy^3 - 10x + 9)$$

Solve each system by graphing.

9) $y = \frac{2}{3}x - 2$ (1)

$y = \frac{7}{3}x + 3$ (2)



(1) $m = \frac{2}{3}$

$b = -2$

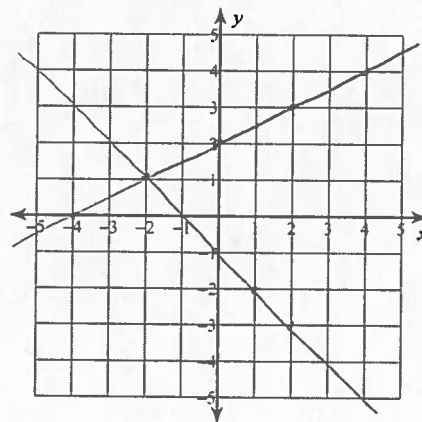
(2) $m = \frac{7}{3}$

$b = 3$

$(-3, -4)$

10) $y = \frac{1}{2}x + 2$ (1)

$y = -x - 1$ (2)



(1) $m = \frac{1}{2}$

$b = 2$

(2) $m = -1$

$b = -1$

$(-2, 1)$

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- 11) Jessica had some candy to give to her five children. She first took six pieces for herself and then evenly divided the rest among her children. Each child received two pieces. With how many pieces did she start?

5 children
6 pieces for herself
2 pieces per child

$$x = 6 + 2(5)$$

$$x = 16$$

- 12) Mofor had \$23 to spend on four avocados. After buying them he had \$7. How much did each avocado cost?

4 avocados

\$ 23 → to spend.

\$ 7 left over

$x =$ price of each avocado

$$\begin{array}{r} 23 = 4x + 7 \\ -7 \quad -7 \\ \hline \end{array}$$

$$\frac{16}{4} = \frac{4x}{4}$$

$$4 = x$$

Answers to Homework 26.1

1) $3v^4 + \frac{5v^3}{9} + v^2$

2) $\frac{n^6}{2} + \frac{n^5}{4} + \frac{n^4}{2}$

3) $\frac{b}{10} + 3 + \frac{1}{2b}$

4) $x + \frac{1}{3} + \frac{4}{x}$

5) $8y^6(-3 - 10y + 9x^3)$

6) $8x^2y^2(-y^2 + 4xy - 4)$

7) $6m(4m^3 + 6n - 7)$

8) $10xy^4(-xy^3 + 10x - 9)$

9) $(-3, -4)$

10) $(-2, 1)$

11) 16

12) \$4